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Farm Department.

CONDUCTED BY J. H. BROWN,
Cliffmax, Mich.

HAY CARRIERS AND SLINGS.

In reply to inquiry of R. O. Logan, of Branch county, would say that we have used slings for several years, and find them to be a great improvement over the fork.

A set of first class slings can be secured for about \$10. The slings which will take three for a wagon load will cost about \$1.15 each. Friend Logan enquires also about geared mills and price of same. In answer to his inquiry some one placed the price too high. A first class mill can be secured for a little over \$75, warranted, and put up on 30 days' trial. I speak from experience.

Jackson Co., Mich.

(During the past season we saw the slings in use in several barns in various portions of the State.

In every instance where the barn or barrack roof was high enough the slings worked perfectly in elevating and mowing away.

One of the principal reasons why we like to have hay delivered in sling loads in the mow is that it is much easier to take out the hay in the winter time. We have pulled and tugged many times at the big bunch in the middle of our mow when the hay was dropped by the harpoon or grapple fork.—Ed.)

HAY SLINGS ARE BEST.

R. O. Logan, of Branch Co., wanted to hear from some brother farmer who had used hay slings or carriers.

I have used them for the past two years and could hardly get along without them. I use a 2x4 Southern pine track.

Two slings are sufficient to take off any load. Can handle hay, beans, wheat bundles, in fact everything a farmer wants to handle.

I prefer slings for their simplicity and their durability. Then they come within reach of our purse; twenty-five or thirty dollars, put up ready for use. There are fifteen or twenty sling outfits in use in my neighborhood.

Jackson Co., Mich.

E. A. MILLER.

(We think we should prefer the steel track, if erecting a new outfit. Our wooden track has bothered by winding or twisting badly. It is made worse by being suspended by single rods running through the center.—Ed.)

FOUR LEADING POINTS IN FAVOR OF SLINGS.

1st. The hay sling an improvement over the fork system? Yes, sir. 1st. One can unload in much less time.

2d. The slings do not interfere with the scaffolds over the barn floor, nor the side of the mow.

3d. Slings will handle short hay, bean fodder, corn stalks or bundles of any kind.

4th. Easy to handle, a boy ten years old can do it easily.

"What kind to use?" Well, I looked over quite a number of outfits, and selected one that has a double swivel steel carrier and steel track, which has about all the good points. It is strong, simple, and easy to handle. Will run either way, without even unhitching the team; simply put the pulley in other end of barn.

The outfit will cost about \$14 complete, rope, etc., for a large barn, at factory, plus freight.

Livingston Co., Mich.

J. B. RAMBO.

(These four points are well taken. If the whole outfit is in good working order it does take less time to dispose of a large load of hay.

As to the second point—more room is needed between the lower edge of track and the cross girts and scaffolds than with the grapple fork.

It is because the sling can be used in handling short hay and wheat bundles, that we prefer it in a large barn.

No small boy can handle the harpoon or grapple fork on a load of hay. In fact, it requires a good man to hustle in such a place. It also requires good judgment, and there is more or less danger. We should never allow our boys to work in such a place.

It is far different when the slings are used. A stout boy of good judgment can then do the work of a man. There are no dangerous steel prongs hanging down or sticking out to threaten the operator below.

The most of the work required is to hook the grapple pulleys into the rings at each end of the load. Just as soon as the layer of hay begins to roll up, the operator steps to one end of the load entirely out of harm's way—even if a breakage occurs.

Several brother farmers have written us, praising the good work of the hay sling. Some mention special "makes" of sling and carrier, but we cannot give the manufacturers free advertising.

In fact, there are several good outfits made and advertised in The Farmer. Write the manufacturers for catalogues and prices.

Friend G. W. White, Lapeer Co., writes that he has used hay slings four seasons. He would not exchange for all the forks in use.

He prefers 2x4 hard maple track, but uses same arrangement as the editor. Recommends putting a one-inch-wide band iron on top for the carrier wheels to run on.

Mr. White prefers the center lock and trip arrangement of the slings. He uses but two slings to each load of hay, but we think we should prefer at least three.

He says he uses the best one-inch rope obtainable. He first boils it about two hours, then stretches it out to dry. This is a good thing to do, we know from our own experience, as it largely prevents those kinks that sometimes bother the farmer when he is in a hurry to unload.

More rope is needed for slings than for forks, say from 30 to 40 ft. Mr. White makes his rack ends about four feet six inches high, with the center pieces ten inches higher. This for hanging the sling rings on. It is then no trouble to find the rings when ready to unload. He uses his slings for handling wheat, oats and corn stover also.

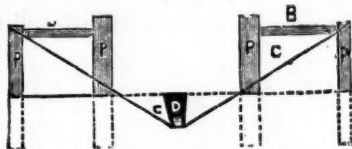
In conclusion, we would suggest that three slings to each load will prove better than two slings.—Ed.)

BRACING GATE POSTS.

BRACING THE POSTS OF A GATE-WAY IN A WIRE FENCE.

For years I have made the question of wire fence and the correct bracing of posts a study. I have braced a great many posts wrongly and some few rightly. Time has proven the good and condemned the bad and my final conclusion is that the only good brace, that can be depended upon to last for years without the least giving way, is that in which the posts are fastened by means of an iron rod or a wire cable to a "dead man" planted firmly in the ground.

I have never seen one that gave way when so planted. The cost to anchor the posts in this way is the least possible, and the appearance is all in its favor. Recently, having to construct a gateway through a string of wire fence, I set about the invention of the best possible anchorage for the posts. The place in which the gate-way occurred was one of great difficulty as the ground was simply peat and spongy muck. Water stood in the bottoms of the holes. However, between the posts we dug a trench 3½ ft. deep as shown at D in the illustration. In this trench we placed a stick of timber 6 inches square and 3½ ft. long. The gate posts were braced by horizontal braces, being extended to the vertical posts P, the distance of some 6 ft. from the gate posts.



BRACING GATE POSTS.

Now from the top of the second posts a wire was passed connecting them, going around the posts and back and forth twice, making four strands. This wire was loose enough to pass down through narrow trenches, under the block D. After the wire was in place the earth was put on the block and very firmly tramped. We did not put back the loose soil but brought clay instead. When the trench was full the wires were twisted into a cable, bringing the posts slightly together at the top. The fence wires were then stretched to their places, taking care, however, that one was stretched on one side and alternately one on the other, else the posts might not have been perpendicular when all was done.

I have confidence in this manner of bracing posts. One can readily see that the tops of the posts are tied together almost as effectively as though the fence were continuous or as though the cable passed in a straight line from the top of one post to the top of another. Had this been the end of the fence instead of the gate-way, I should merely have fastened the cable firmly to the "dead man" D, and it would hold equally as well the end post as it holds the gate posts. It may be that the galvanized iron will corrode after a time, and that half-inch iron rods for the part under the ground will be better. This manner of bracing the posts is applicable to any style of iron fence and is my own invention and is cheerfully donated to my brother farmers.

Champaign Co., O.

J. E. WING.

(The principle of bracing is the same as we gave in setting our end posts. But we prefer the heavy braces made of old wagon tires, to the twisted wire cable.

On our farm we set the "dead man"

deeper down, so as to pile some heavy stone on top, then fill with heavy clay.—Ed.)

LEVEL CULTURE VS. HILLING FOR POTATOES.

While working in my potato field with a Breed weeder, during the past summer, an old farmer came out to watch me using the new tool. I could see by his expression that it did not suit him. At last he said that he always hilled them up with a big high mound around them and thought that they did much better. He advised me to do the same, or at least try a few rows. While I was almost satisfied in my own mind that there would be no benefit from it, I finally hilled up a few rows, for I was on a soil that was new to me and thought that perhaps it might make a difference. When digging time came I got the scales and weighed those hilled and some not hilled for comparison. I found those that were hilled fell short about ten pounds on a row, and if I had hilled the field the loss would have been about ten bushels per acre.

While this experience is in no way conclusive, yet I believe it to be in line with others of a similar character, as well as the experience of our best farmers. But in driving over the country we will see many patches that are hilled up; indeed it is a more common practice than one would suppose, and it has been a study to me just why it is so, and I have come to the conclusion that it is more of a matter of tradition than anything else, handed down from the time when the varieties grown and the conditions of the soil were much different from what they are now. The old gentleman referred to, gave his experience how he planted a pasture field a good many years ago, putting the hills four feet each way. The variety, Peachblows, were well hilled up and grew all summer and covered the ground with the vines, and after being killed down by frosts, they were dug and some hills yielded nearly a peck of nice potatoes. Therefore, from this experience and perhaps other of the same character he came to the conclusion that hilling was the one thing essential to success, and probably under the circumstances it was, with the tools they then had to work with, and the shallowness of the soil, the stumps and roots in their way a deep seed bed could not be made in any other way but by hilling.

In these days we do not have to work in a shallow, rich soil if we use the latest improved tools, but if we have the fertility we can still go down into the soil and make a deep seed bed, and put the seed in deep enough to avoid any need to hill up to keep the tubers from sun burning, and in this way we do not run the chance of having the soil dry out during a drouth.

Another difference that time has made is the change of varieties. No kind that is popular at present will grow through the entire season to be killed down by the fall frosts, as did the old Peachblow and others of the same characteristics, but the best varieties we now have will

grow and make a crop inside of three months. During the past summer I have grown the Sir William and Rural New Yorker No. 2 in about ten weeks, to large, fine sized potatoes, and our earlier ones will do still better than that.

Recent experience leads me to think that if we can eliminate the blight from our potatoes we will be able to make them grow the entire season. But with our improved tools, deeper soil, and better varieties, it is not wise to follow a practice which might have been best in the early day.—E C Green, Medina Co., O.

HINTS ON THE ERECTION OF BUILDINGS.

We are now, April 15, completing our sheep barn and I may be able to give a few "pointers" to those who contemplate erecting a building of any kind. In regard to the size, plan, etc., of this barn I will write at some (near) future time. At present I will only make a few suggestions that I think may be profitably regarded by those contemplating the erection of any kind of a structure of importance.

If you mean to erect a building of any importance or magnitude, within the next twelve or eighteen months, it is none too soon to begin to think and plan. Keep your eyes open. Inspect the buildings of your locality; learn their merits and demerits. After your plans are matured, lay them before men of judgment of your locality, or send them to some agricultural paper, inviting criticism.

To minimize the cost of building it is necessary to so manage that all the work connected therewith, such as making shingles, cutting and hauling logs and lumber, getting out stone for foundation, and in fact, the erection of the building, shall be done at a time when other farm work is not pressing. Don't do any of this work at a time when the season is favorable for planting, cultivating or harvesting a crop.

After deciding to build, our first job was to fell a tree for shingles, and saw into blocks the proper length (26 inches). This we did last April when it was too wet to plow. Some may think this not the right time of year to cut timber. Possibly so; our shingle maker, however, thinks it makes but little difference when timber is cut for shingles. The cutting of the timber for shingles is work that the farmer and his boys can do, and thus materially reduce the cost of making. In our locality, shingle makers charge \$3 per thousand for riving and shaving 26-inch shingles, or \$4 per thousand when they "take the timber from the stump." Our sheep barn required about 5,500 shingles. By cutting the timber ourselves, the cost, or perhaps, I should say, the cash outlay was reduced \$5.50.

When one's bank account is meagre, as was the case with us, it is necessary to save a dollar here and a dollar there, and pay out no money for work that he can possibly do himself. Our sheep barn required in the neighborhood of 8,000 feet of lumber. We did most all the work of cutting timber, loading and hauling logs and lumber ourselves. This work, in conjunction with our general farm work, made the winter of 1897-8 a very busy one. At times we thought that we would surely swamp, but we succeeded in "pulling through," and we now feel that we have one of the best buildings of the kind in Knox county, O.

We employed two skilled mechanics at \$1.25 each per day, and then we had from two to three common workmen, handy with tools, at 75 cents per day. This latter class will do as much of some kinds of work, such as weatherboarding, lathing, cutting braces, notching rafters, etc., etc., as an experienced mechanic.

In the selection of workmen it is policy to reject all talkative or "tonguey" ones, not only for the reason that you are at a heavy expense, with hands to pay and board, and cannot afford to have them spend their time in that way, but for the additional reason that men with minds diverted with gossip are more likely to make mistakes than are those whose minds and attention are riveted to their work. You don't want any "gasser" on the job. It is especially important that the "boss" be thoughtful, sober, and of few words. We feel that the women folks who have the burden of the cooking to bear, will say amen to this bit of advice.

*Keep all nails, hinges, etc., in the dry, and have it understood with your hardware dealer that he take back any surplus left. Also have an understanding with all workmen at the start in regard to wages, board, time, etc. Delegate yourself as one of the workmen, and never permit this personage to be absent if possible, for even an hour. This is important, as hands are more likely to work well when the employer is present,

and besides, you are needed anyway to see that everything is done to suit you.

Shingles should be thoroughly water soaked before being "driven," as they will not split so easily. We hauled ours to the prospective building spot and placed them in a pile on the ground, butt ends down, and then covered them over with straw. They received several good rains before being used, including the great rain which caused the historic flood of March 22. When we came to "drive" them we found them thoroughly water-soaked, tough, and in prime condition for laying.

Before you get your carpenter and begin work on the building, have all the material on the ground. Make a careful estimate—or have some carpenter do it—of the material required for the structure. We were a little unfortunate in this respect, not having material enough on the ground to complete the building, and being compelled to leave off work on the building and go to the woods and cut logs and haul them away to a sawmill. Better have a little material left over than not to have enough.

When you are ready to raise your building be sure to get the promise of hands enough to do the job with ease. At such dangerous work men are timid, especially when the force is weak in comparison to the work required. We had about thirty hands at our "raising" and should have had a dozen more.

In conclusion I will say. Be sure your ideas in regard to plans, etc., are mature before you have the carpenters come and begin work. Leave nothing to study over and decide after this. Draw a sketch of your proposed building on cardboard for the benefit of your carpenters, and be sure they have an accurate understanding of the plans before they begin work.—Frank Leslie.

EXPERIENCE WITH HORSE FORKS AND HAY SLINGS.

A few years ago, when repairing an old frame barn, we made it six feet higher, and put in a track and carrier for a horse fork. As the mow is so small, only holding about 30 tons of hay, it was necessary to take the hay in by a doorway at the end. This we made six feet square and found it small for some loads that the fork took from the wagon. We first bought a single-harpoon fork of the best pattern made, we were assured. It is 25 feet from ground to track.

We soon found that it was a difficult matter to handle clover hay satisfactorily with a single harpoon fork. When the growth was long, we got along fairly well, but if short, too much was left on the ground while unloading, and some of the loads taken up were provokingly small.

To hasten the work of unloading by increasing the size of the loads, we purchased a double harpoon fork. This did better than the single, but when the clover was short and very dry, it was almost a failure. As clover hay is the only kind we make, it became necessary to try some other plan. As it was, with the use of the forks we came to dread the mowing away of the hay. We had been using a hay rack 16 feet long; we knew it was impossible to use a sling for so long a rack, and operate it through door end at our barn. If we could get a doorway large enough, the strain on track and rafters would be too great.

To get within the strength of our track, and have a load not too large for the largest door we could conveniently make, we built a new hay rack 18 feet long and divided it in the middle by a frame six feet high. The uprights of this frame fitted in strong metal sockets, bolted on the sides of the joists on which the rack was built. Then when not using the slings the frame could be lifted out and set to one side.

Instead of using three slings to a rack 14 feet long, as usually recommended, we used four slings, two to each end of the rack.

The slings as we use them on the rack are shortened to 14 feet. One end of the sling when placed for the load is dropped down over the end of the rack, either in front or behind, as the case may be. The other end is thrown over the cross-pieces of the upright frame in the center of rack.

When these slings are well loaded, we have, when ready to enter the mow, a roll about four feet in diameter and as long as the load is wide. We found on trial that our doorway, seven feet in the clear under the track, would not let the load in, as the hay hanging over the sides of the slings would catch on the cross-tie. By widening the doorway to 8-4 feet, and lowering the cross-tie under the door to make the distance below the track the same as the width of the door, we find the loads pass very nicely.

Our track extends out from the barn about three feet, which is hardly as

far as it should to prevent the hay rubbing against the barn as it goes up. This rubbing tilts the load to some extent and prevents the perfect working of the carrier trip. When the load is put on the wagon in sections, each section should stand directly under the carrier when unloaded. The four slings and necessary attachments cost \$4.50, and in two days' work as compared with the use of the single harpoon fork in unloading clover hay, they paid for themselves. The fork was a failure, the slings a success. By using two more slings and building the loads a little higher, we can bring as heavy a load to the barn as we wish. The six slings can be unloaded in 15 minutes. When we attempted to unload with the horse forks it frequently took longer than it did to load the hay in the field.

It requires more room to operate the sling in the mow than it does for the fork, and consequently the hay cannot be filled as closely to the comb of the roof without a good deal of pitching. To save this labor we use the single or double harpoon fork, to fill in close to the roof. For this last part of the filling, we can usually get hay that the fork will carry.

We find the strain on the rope carriers and pulleys much less to unload with the slings, as we have them arranged, than to pull a forkful out of a load when using a fork. Last year we made inquiry of a leading hardware firm in Chillicothe (our county seat) as to their sales of slings, and found they had never sold them, and hardly knew what they were.

The general impression with farmers is, that they require everything connected with their use to be so strong that they fear their barn frames will be injured by their use. But the greatest drawback to their use lies in the fact that farmers are not informed as to their utility.

We said to a farmer friend, that uses a horse fork, that the sling was as far ahead of the horse fork as the horse fork was ahead of the pitchfork. He said it was not possible. A trial will convince him or any other doubter. For own use, excepting to fill up against the track, we would not have a fork of any pattern as a gift and be compelled to use it, discarding the slings. When we enlarge our barns, or build new ones, we shall have larger mows, and will use slings all the time, unless there is something better in use then.

With hay properly loaded on slings, there will not be enough left on the rack or ground to feed the teams, as is the case often when a horse fork is used.

When slings are properly used, it is a question with the hens where the waste is to come from for nesting material.—John M. Jamison, Ross Co., O.

SPONTANEOUS COMBUSTION AGAIN.

As this promises to be a particularly good season for the occurrence of spontaneous combustion owing to the excessive moisture and rankness of the clover which will make it slow to cure, I think perhaps a little more attention given to the subject will be profitable and of interest. In a recent issue of the FARMER I told our experience with green oats that took fire in the mow, and burned to a crisp without damage to the building itself. I have no doubt that had we stirred up this mass and given the air access to it we would have been "out of" a good barn in short order. In further confirmation of this evil I append a letter recently received from Mr. Henry Wallace, Polk county, Iowa, a gentleman with whom most of our agriculturists are well acquainted:

"I noticed an article from you in which you are quite skeptical as to the possibility of spontaneous combustion, and also a statement of your experience in putting in hay on the greenish order.

"Like you, I was some years ago very skeptical and did not believe it. I wrote to Professor Sanborn, who scouted the idea, but within ten days after receiving his letter I was able to send him a lot of charred clover hay from the center of a mow, which converted him fully and completely, and he replied that there was no arguing against facts. My dear sir, in one year there were more than one hundred barns in Iowa destroyed by the spontaneous combustion of clover hay. It seems that in certain seasons the risk is a great deal more than in others, and it is more frequent in Northern Iowa than in Southern Iowa. Some scientists in Breslau, Prussia, claimed some years ago that it was due to a fungus called *aspergillus fumigatus*. All the heating of our clover hay is due to a fungus, but the ordinary fungi do not develop sufficient heat to cause spontaneous combustion, and his claim is that this

particular fungus does. I do not know whether this is true or not, but there is nothing more clearly established in my mind than this fact, that in certain seasons when clover is put in green in bays over 20 feet deep, and the hay placed on the floor or on rails, spontaneous combustion is very likely to occur. This has been settled in England long ago and is one reason why hay is never put in barns in that country but always stacked. I knew of one case of a stack taking fire in Iowa. It was put up green, was seen to steam for a number of days, and the horses running in the pasture seemed more fond of it than the other stacks, ate in around it a foot or two, when in the sight of the owner it blazed out into a flame and was destroyed. In one case in this state, a farmer found his hay was combusting but had not broken out into a blaze. He got his neighbors, loaded it into wagons, scattered it out onto the fields and there when exposed to the wind and air it took fire and burned.

"I shall take up this subject in a book I am preparing on clover growing, which I hope to have ready for publication in November, but really have nothing more to add than appeared in my former work six years ago."

In both cases noted by Mr. Wallace the hay in the mow was disturbed while this heat was going on. In one case by the man hauling it out and the other by the horses eating it out. I can not but feel that had this disturbance been avoided the fire would most likely have not broken into flame but the heat would gradually have subsided and the only damage that would have been evident would have been the loss of the charred hay.—Joseph E. Wing.

Plowing Clover Under.—When is the right time to plow clover under for wheat? Tell how to make a perfect seed-bed. Ours is the mammoth clover, very light, and has some timothy in it. H. C. Mickey, Huron Co., O.—Plow the mammoth clover and timothy all carefully under when it is in full bloom about July 1. Use a jointer plow and a drag chain—a heavy log chain—looped from the plow beam to the end of the furrow horse's even-er, so as to drag or suck every spear of grass and clover completely under ground. Then roll and harrow or cultivate about once a week or ten days, or after heavy rains, or whenever weeds start. You thus get eight or nine weeks of summer fallow and get the soil very fine and moist ready to drill in the wheat Sept. 1 to 10.

Willows.—Is there any time of year that willows can be cut so they will not sprout? W. H. S., Ravenna, O.—They are liable to sprout if cut at any time of year. Two years ago we had several hundred water willows girdled in August. They leafed out last year to some extent, but this year nearly all are dead, and few sprouts have appeared.

Wireworms.—Wireworms are abundant in our garden, and eat the potatoes badly. Do you know of any remedy? C. E. T., Ridgeway, Pa.—The only practical, immediate remedy we can suggest is the English method: Thrust a stick four or five inches long in a potato and plant the potato, the stick projecting out of the ground. These are planted thick, in rows, before the crop is planted, or between the rows after crop is planted. The wireworms get into the potatoes and can then be destroyed. Small, unmerchantable potatoes are used.

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THE RAZOR-BACK HOG.

From the bacon hog to the razor-back is not considered a very long step by some writers for the agricultural press, and having said about all that could be said upon the first, they are now devoting all their energies to making the latter famous. Herewith we print a description of the razor-back hog, and it is a fair one. We have interviewed him in Virginia and North Carolina, some years ago, it is true; but the breed and its characteristics never change. The razor-back is the natural outcome of his surroundings. He is the survival of conditions under which the civilized hog would soon become extinct. He takes two years to mature, and his growth is mostly upwards. He never spreads himself, nor gathers a pound of fat in his natural state. He is hardly because his surroundings are such that the weaklings die off. As for his meat, we think a good appetite has much to do with its vaunted flavor. His side meat generally lacks sufficient fat to fry itself. His hams are free from fat, and if mature, are as muscular as those of a race horse. The flavor certainly seemed good, but the curing helped that very materially. The hams sell at high prices, but they are so small and take so long to grow that we doubt if the high price pays as well as the meat grown on the improved breeds. The following description of the razor-back is by the manager of the Biltmore Farms, and appeared in the Southern Farm Magazine:

The "razor-back" hogs of the South have always been the butt of jokes innumerable. This type is supposed to have survived on account of his ability to outrun the negro, and to go sideways through the rail fence into the corn-field. With a knot in the end of his tail to make the garden palings limit his foraging excursions, and like the man who sold his shadow to the devil, too thin to possess one of his own, he has been a much abused animal. His existence usually lasted through two years, comprising a winter of corn-nubbins diet, which just kept him at about the same weight as that at which he had come up with from his first season in the woods. When the acorn mast of the next fall was exhausted he would be taken up to feed and given a final fattening upon corn, netting about the same weight as an eight-month-old pig of one of the improved breeds. The only redeeming feature of the razor-back is the quality of the hams; possessing very little fat and of small size, they have a fineness of grain; a firmness and a flavor, when properly cured, which, once tasted, is never forgotten. This is the hog which has made the Smithfield ham of certain sections of Virginia so famous. Their high quality is secured by (1) slow maturity; (2) game flavor, produced by free life in the woods and the varied diet of nuts, etc.; (3) the rapid finishing process upon cowpeas in the fall, and, finally, confinement, with nothing but hard corn and water; (4) lastly, the method of curing.

In spite of many attempts, no other hog has been found that will produce exactly the same small, flat, fine ham, and with the price that it brings, being about twenty-two cents at the smokehouse, they can afford to raise a hog especially for this purpose, using the sides and shoulders at home or for the farm hands. The razor-back can be tolerated only where there is abundant woodland range, and these are becoming scarcer every year. Moreover, the amount of offal is large, and he has disappeared everywhere before the institution of modern farming methods. "Quick" is the word now in all things, and in the improved breeds we have a rapidly maturing hog, with all the weight practically taken off the head, neck, shoulders and hide, and the fuller development of the more valuable parts in the shape of deep and flat sides and hams.

HORNLESS CATTLE.

Dr H. H. Lamson of the New Hampshire experiment station, in a recent bulletin, advises the prevention of growth of calves' horns, thereby preventing the disagreeable features of dehorning. The horn consists of an outer growth or shell connected with the skin and the inside or pith, an outgrowth of the skull. At the birth of the calf these

parts are undeveloped but begin to grow at once and in a short time the "button" of the horn can be felt.

"The horn tissue develops from the skin just as do hoofs and claws in the lower animals and nails in human beings. There is a zone in the skin about the base of the horn known as the matrix, from which new horn-cells are constantly being formed, the older parts being pushed on. If we destroy the periosteum from which the bony part of the horn is formed and the matrix from which the horny part is formed, we prevent further development of the horn. In removing horns which are already more or less developed, as in dehorning mature animals, the cut must be made deep enough to include the matrix, or the stump of the horn will continue to grow. It may not be out of place here to remark that there is no danger of cutting into the brain cavity, as at this point it lies very deep. The openings frequently seen on removing the horns are only empty spaces with which the frontal bone is honeycombed.

In calves the growing points of the horns are small in extent and can be destroyed with little trouble. In our experiments we have made use of caustic potash. Caustic potash, so called, is a pure form of the same substance which constitutes the potash sold in cans for soap-making and cleansing purposes. It is in the form of white sticks, in diameter about the size of an ordinary lead pencil. As its name indicates, it is a powerful caustic, rapidly destroying the skin and other tissues if kept in contact with them. In this property lies its value as a preventive of the growth of horns. When properly applied it destroys the matrix or growing point of the horny tissue and the underlying periosteum from which the bony pith grows.

DIRECTIONS FOR USING CAUSTIC POTASH.

The hair should be cut away from the young horn as thoroughly as possible so that the potash may come in intimate contact with the parts to be treated. The oily secretion should be removed from the parts to be touched with the potash, by wiping carefully with a rag or sponge moistened with soap suds, or water containing a little ammonia. Parts not to be touched should not be moistened.

The stick of potash is rolled up in a piece of paper so as to leave one end exposed. The exposed end is dipped in water to moisten it and then rubbed on the button or embryo horn until the skin begins to start, care being taken that the whole of the button and the border or matrix is included in the treatment. In young calves a few days old a surface half an inch or a little more in diameter will cover these parts.

Caustic potash, or caustic soda, which answers as well, can be obtained at almost any drug store. When not in use it should be kept in a closely stoppered vial, one with a rubber stopper preferred, or it will liquefy.

After the calf is two or three days old the sooner the potash is applied the better.

"FEEDS AND FEEDING."

We claim to know a good thing in this line when we see it, and can assure our readers that this book is all right. One might experiment a lifetime and gain no more knowledge on these subjects than a month's study of this book will give him. In more senses than one it is a volume of exceptional character. Bulky in size, extending to about 657 pages, it is comprehensive in scope, unusually minute and definite in detail, and singularly free from ambiguous padding. The first thing, perhaps, which strikes the reader is the agreeable clearness with which the abundant facts are made to stand out in eye-catching fashion, instead of being hidden away in endless pages of needless verbiage, which is unfortunately a common fault in many of the works on the subject. Professor Henry has wisely dispensed to the utmost possible extent consistent with reasonable explanation of the facts and figures produced, with generalities and commonplace repetitions, and as a result the reader has not long to search, and seldom to search in vain, for the specific information he desires. The volume, as we have indicated, is brimful of solid facts relating in their astonishing diversity to all conceivable departments and phases of the stock-breeder's calling. The leading aim of the author has been to produce a standard work on livestock breeding and management.

"Feeds and Feeding" is a large octavo volume of 663 pages. It is printed from new type upon clear white paper, and substantially bound in art vellum.

No breeder or feeder of live stock can invest \$2 to as good use. Prof. W. A. Henry, the author, and director of the agricultural experiment station, university of Wisconsin, writes us as follows:

"Besides six years of the most patient steady work, I have expended over \$1,000 in cash for help in preparing 'Feeds and Feeding.' There are single tables in the book which cost me from \$5 to \$30 apiece for help in compiling and simplifying. I have had thousands of pages of works in foreign languages briefed in order that I might select just what was needed for a book."

Not counting Prof. Henry's time, the book cost him in cash more than \$1,000, and all of this is placed at our readers' disposal.

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the price of the book, express charges paid to your nearest express station. Or send 8 subs to run to January 1 and \$4, and we will send you the book free. Address all orders to The Michigan Farmer, Detroit, Mich.

HOG CHOLERA.

I have been interested in this subject for over 20 years. We have many cures and many suggestions from our great men, of whom we expect correct information in regard to this destructive malady—the worst plague we have to encounter on the farm. It seems to me that the veterinarians have all failed to tell us the cause of cholera among hogs.

I have seen some very good reports from the vets at Washington and elsewhere, but still we do not get the knowledge we want—how to prevent the dread disease. They forget to tell us the first cause, but say a great deal about the second cause. Some prescribe to cure a disease that is almost sure to kill every time, no matter what we do.

This appears to me to be all wrong. It is locking the stable door after the horse is stolen. I read a story of two colored doctors. One, Dr. Snow, had a case and the other, Dr. Johnson, was called in as counsel. Dr. Johnson commenced at the top of the patient's head and gave an analysis of his condition, in Latin terms, down to his feet.

"Is you through 'splainin'?" said Dr. Snow.

"Yes sah," said Dr. Johnson. "Well sah," said Dr. Snow, "I knowed mon befo you commenced 'splainin' den I knows now. You's gist ceeided in flabbergastin' me."

So with the vets. There is too much science in their talk, and they only succeed in "flabbergastin'" us. They rehearse, over and over, their scientific nonsense (to us) until we are lost to the real facts in regard to the primary cause of the disease, and no information is given as to prevention except by some sort of medication, and that never does any good after the seeds of the disease are sown in the hog's stomach. Medicines highly recommended to cure are powerless. The farmers of the West have lost all faith in hog cholera cures. What we want is something to remove the cause, and it must be done without medicines. Who wants to eat the meat of hogs that have been fed drugs to keep cholera off? The wonder is that the human family do not die in convulsions from the effects of eating medicine fed hog meat. If a hog is cured of cholera it is worth nothing afterwards.—E. W. James, Phelps Co., Mo.

H. F. Brown's sale of Shorthorns at Minneapolis, last month, averaged \$245.74 for 27 cows, \$171.11 for 9 bulls, and \$227.08 for the entire offering. The cattle were bought largely by farmers. Contrast these prices with the prices realized by G. J. Hagerty at Newark, O., Oct. 27, 1892, when 48 head of Shorthorns of unexceptionable pedigree and breeding averaged only \$56.02—not much more than butcher prices. Had Mr. Hagerty held his herd till this time he would have averaged three times as much.

Live Stock Insurance.—Are there any companies that insure horses and cattle from theft, becoming lost, etc.? A. M. W., Lakewood, O.—We know of none. Regular insurance companies insure against loss by fire or lightning. There were a number of live stock insurance companies in Ohio ten to twenty years ago, but they all failed.

The cottonseed industry of the United States amounts to 4,000,000 tons annually, valued at \$120,000,000. In 1867 there were four mills, in 1897 over 300 mills, with an invested capital of \$10,400,000 and employing 10,000 people. The exports in 1896 amounted to 800,000 barrels, and there are now crushed annually in the South about 1,500,000 tons of cotton seed which gives a product of 700,000 tons of hulls alone.

FOR SALE. Two 2-year-old Holstein-Friesian Heifers due to calve in July, registered and good ones. Also Dorset Rams, WOODMAN & BLAIR, Manistee, Mich.

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CATTLE.

FOUR EXTRA GOOD SHORTHORN BULLS ready for service \$100 each, if taken at once. T. M. SOUTHWORTH, Allen, Hillsdale Co., Mich.

J. F. & E. W. ENGLISH, Clarksville, Mich., breeders of Registered Polled Cattle. Andrew Boy, sire and dam imported, heads the herd.

Registered Shorthorns FOR SALE.—3 young bulls, 6 or 8 young cows. Young Mary and Phyllis families, bred to Peri Duke 5th. Minor Davidson, Tecumseh, Mich.

A HIGH bred registered Holstein bull, 2 years old. Dam "Walled Lake Queen," that won first in class and sweepstakes prize of Gold Medal at World's Fair, Chicago. Being a little under size will be sold cheap. Photograph sent. B. F. THOMPSON, Detroit.

SHEEP.

REGISTERED RAMS AND EWES FOR SALE at Rambouillet, U. S. A. THOMAS WYCKOFF, importer and breeder, Orchard Lake, Mich.

SHROPSHIRE HALL STOCK FARM has on hand a few choice imported yearling and two-year-old rams, imported ram lambs and yearling and two-year-old American bred ewes and rams. Personal inspection invited. L. S. Dunham, Concord, Mich.

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CHOICE fall sows ready to breed \$8 each; 1 boar. J. Wilkes, Corwin, U. S. and Tecumseh in stock. Send for catalog. J. C. TAYLOR, Grass Lake, Mich.

CHESTER White Swine and Lincoln Sheep. Either sex and all ages for sale. Sows bred for spring farrow. Write A. H. WARREN, Ovid, Mich.

FOR SALE.—Large Poland-China sows, bred to Model Wilkes, Vol. 20, for Mich. and April farrow. Prices reasonable. F. M. PIGGOTT, Fowler, Mich.

FOR SALE. 2 POLAND-CHINA sows with pigs by their side. E. D. BISHOP, Woodbury, Mich.

FOR SALE.—Large Eng. Berkshires; Longfellow and Wantage strains, King of Hood's Farm, Mass. Prices reasonable. V. E. Hackney, Mt. Morris, Mich.

MERCHANT KELLY, Woodstock, Mich., breeder of LARGE ENGLISH BERKSHIRES. Pairs not akin for sale cheap.

POLAND-CHINAS.—Orders booked now for pigs. M. B. Turkey eggs, \$2.50 for 11, and B. P. Rock \$1.50 for 13. O. B. ROBINSON, Edwardsburg, Mich.

R. M. CROSS, Ovid, Mich., breeder of Victoria swine. Stock for sale. Breeding stock recorded. Reasonable prices. Correspondence solicited.

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Poland-Chinas. I am taking orders for spring pigs; if you need one address L. F. CORRAD, Wacousta, Mich.

QUICK BUYERS GET BARGAINS in Poland-China hogs. Write to-day for prices. A. H. Foster, Allegan, Mich.

KLEVER'S TECUMSEH heads my herd of weight 200 lbs. at six months, extra length and great depth. Sired by the \$5 100 Klever's Model, dam by the great Chief Tecumseh 2d. Write your wants. WM. H. COOK, Waterford, Mich.

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Detroit, Mich.

ROOTS AND RAPE FOR CREEP.

Now is the time to see that the supply of roots for next winter feeding is looked after; also rape for fall feed in case of dry weather and short pastures. And let me say to everyone who wishes to see large lambs next fall and winter, sow rape. We have had good success with it for two years past. It is easy to grow, provides lots of feed to the ground, and will fatten lambs faster than any other feed I know of.

It is now late for mangel wurzel or sugar beets, but if sown now a fair crop may be grown. We fed beets this year until May 20, and never had sheep go on grass in better shape. Swede turnips are my favorite for sheep until late in March, and June is the month to sow the seed. Get a patch ready now, sow the seed in drills two feet apart, thin to 10 or 12 inches in the row and my word for it you will be glad of it next winter. We prepare the ground the same as for other crops, only better; make it fine, smooth down with plank drag, and drill seed with hand drill.

We drilled a piece in rape May 7. It is growing nicely. We expect it to be ready to cut about July 10. This patch is near the barn and will be cut and fed in the barn at noon, during the hot days of July and August. We sowed another piece June 4. This we will likely pasture off with lambs during the fall months. We also drilled first seeding of turnips June 4. Will sow more rape and balance of turnips about June 15. We drilled mangel wurzel May 7, and the rows show nicely now, although the weather has been rather cold and wet. A few low spots failed to come up on account of being too wet. We will transplant on these spots if weather is favorable; if not, will sow to turnips later on. In this way a good supply of roots can be grown with little cost and on a small area of ground, and furnishes the much needed succulent feed during the winter months. One acre of land will yield from 500 to 1,000 bushels and will be all that is needed for a flock of 50 sheep. Rape from July to December, then Swede turnips to March, and mangel wurzel to May 15 or June 1, and to my mind we are fixed for green feed for the months not best supplied with grass.—S. V. McDowell, Mercer Co., Pa.

ANSWERS TO QUESTIONS.

GOITRE.

H. N., Civil Bend, Mo., describes kernels in the necks of young lambs. Two lambs showing them came dead; others are growing all right. They are pure-bred Shropshires. Their mothers were shipped from Michigan in March. Have been fed mixed grain and hay rations all winter.

This abnormality is goitre. It is quite common in young lambs. Numerous theories have been advanced in explanation of its appearance in other animals as well as man. It has sometimes been thought hereditary, that is, due to the sire. In others it has been thought to have been due to the character of the soil, either to the presence in superabundance, or to the absence, of some element. No work on surgery that I have ever seen has advanced the theory that it was due to lack of exercise, but I have noticed that in instances of general appearance of this abnormality the ewes had had very little exercise during pregnancy. Several years ago we sold about one-half of a flock of ewes. The purchaser bred them. They were wintered in the stable, being let out only to drink and eat. Their grain feed consisted almost entirely of bran. More than 75 percent of their lambs had goitre.

I think that in every case I have known this cause would explain it, yet I know that it does not always appear in flocks where the ewes have been closely confined. I have ewes the past winter that were not out of the stable for three months previous to yearning yet not a single goitre appeared. The fact, however, that goitre will appear in mature sheep that are closely confined in fitting for show, gives more credence to the theory.

In the majority of cases the goitre continues to grow, inducing great difficulty in breathing. I should consider a lamb thus affected about worthless except for mutton. It in no wise injures the flesh. I have no data upon which to base a judgment as to whether it is hereditary, but as other somewhat similar maladies are known to be, I should hesitate to use an animal showing goitre, even though small, for breeding purposes. Treatment, either surgical or medicinal,

is not satisfactory. The lamb will not thrive after the removal of the gland.

STARTING A FLOCK.

A. H. R., Fairview, W. Va., "I would like some advice in regard to my sheep. Last year my twenty ewes reared twenty-one lambs. This year they have had only three lambs. One ewe, however, died that would have had twins. I used a yearling Southdown ram. The ewes were very fat. Some of my neighbors think that the cause of their failure to breed. The ewes are half blood Southdowns and six or seven years old. They average five pounds of wool. Is the failure to breed probably the fault of the ewes or ram? Would I better sell all and start anew? Is that an average fleece for the mutton breeds? What aged ewes shall I buy?"

I should say that the ram was at fault. I do not think that ewes that had bred previous years would get so fat that they would not conceive. If your sheep were washed you have a good flock for the breed to give that weight of fleece. That is hardly an average fleece for the Downs or the Longwools. The Southdowns are the lightest shearers. Whether I should sell or not in your situation would depend upon whether I could buy again as good sheep for less money. Those ewes are good for four or five years yet. I suggest that you breed them at once. You are near enough Washington and New York to get them to market alive if you do not think you can dress them.

In buying ewes I should consider that they depreciated about 50 cents a year after maturity. For rapid growing lambs I think it is conceded that the Dorsets lead them all. After the Dorsets I think the most successful growers of hot-house lambs prefer ewes with a predominance of Merino blood and ewes that have raised one or more lambs.—H. T. Miller.

FLOCKS AND FLEECES.

The losses of sheep in California during the drouth of the present spring and early summer have been very heavy. The lamb crop is reported to be short, and the only escape from further disaster seems to be to move the flocks eastward where pasturage can be obtained. Many thousands have already been moved and thousands are on the way.

The Merino sheep breeders of Vermont and New York have suddenly shown increased interest in their flocks, the result of large purchases of stock at good prices for Australia and South Africa. There is no other industry which can do more for the farmers of those two states than sheep raising. They are eminently fitted for that purpose by climate, soil, and products.

Sheep shearing is about over in this state, in fact the bulk of it was done 30 days ago. Washing is largely a thing of the past with Michigan sheep men, and shearing can therefore be done a month or six weeks earlier than when this foolish custom was followed. We regard it as good policy to shear early. It is better for the sheep because it relieves him of his heavy fleece before the warm days of May and June make it a burden. Then the new fleece gets a good start before the warm weather sets in, and protects the back of the sheep from the hot rays of the sun, which frequently produce sun scald. In addition to these reasons is another and very important one. The sheep shorn early always does much better than one which had to carry his fleece late. This can be observed in a flock where some have been shorn early and others, for some reason, allowed to carry their fleece later. The shorn sheep will at once begin to put on flesh, and show greater activity than the unshorn. In every way, therefore, early shearing is preferable both for the sheep and its owner.

The Wool Record publishes figures regarding the comparative weight of fleece to gross weight of the animal of a number of the prominent breeds, which it says is the result of investigation. From the figures given it appears that the fleece of the Cotswold was 8.3 percent of its weight, the Shropshire 8 percent, the Southdown 6.6 percent, the Lincoln 5.3 percent, and the Oxford Down 5 percent. A number of representative flocks of Merinos examined showed that the rams averaged 19 percent of fleece to gross weight, and ewes 17 percent. We certainly doubt the figures in the case of the Oxfords and Lincolns, as they are contrary to the results obtained in previous investigations.

Official statistics from that country state that Russia has 60,000,000 sheep, of which one-fourth are Merinos, averaging six pounds of wool each, and the 450 woolen mills of European Russia employ 50,000 workmen and produce goods valued at 45,000,000 rubles.

Dogs have been making havoc among sheep in Kalamazoo township, Eaton

Co., and several farmers have lost a number of their wool producers. Now they have organized for revenge, and have sworn to kill every canine found on their premises whether he is interfering with sheep or not.

The clip of wool in Ontario for the year 1896 amounted to 5,581,387 lbs., the average number of lbs. per fleece being 5.62. The county of Gray raised the largest amount of any county in the province.

The Wool Record says. The wool clip in Bourbon county, Kentucky, this year will aggregate 75,000 pounds, most of which has already been bought by Brent Bros., at 20 cents.

Russia has 60,000,000 sheep, of which one-fourth are Merinos, averaging six pounds of wool each, and the 450 woolen mills of European Russia employ 50,000 workmen and produce goods valued at 45,000,000 rubles.

A Rutland, Vermont, dispatch of May 19th, says: About three hundred Merino sheep were shipped recently from Rutland and Addison counties, in this state, and Washington county, in New York, for Australia. Central New York is also beginning to ship pure-blooded sheep to the same points, receiving equally good prices. The sheep raising industry of Western Vermont has suddenly revived. There is a large demand from South Africa and Australia. This industry has been at a low ebb for a long period, but those who have kept the best products of these flocks are now reaping an ample reward, as the best bucks are now selling at from \$300 to \$500 each for sheep raising in foreign countries, and female sheep in the same proportion.

THE WOOL SITUATION.

The Boston Wool and Cotton Reporter of June 9 says: Prices are more firmly maintained than at any time for weeks, while sales are smaller. The latter fact is attributed in part to the unseasonable weather last week, which kept some manufacturers from town who might otherwise have been here. The main cause of the activity is, however, traced to the fact that the demand for wool to go into army goods seems to have been satisfied for the present at least. At the moment the principal concern of the trade is to arrive at an understanding with the growers that will admit of a profit in the seaboard markets. As yet, however, the West has shown no marked disposition to concede anything in the matter of price. It is believed that stocks of wool on hand in the mills are becoming depleted and that mill owners will soon be forced quite generally to the market.

The sales of the week in Boston amounted to 618,500 pounds of domestic and 362,500 pounds of foreign, making a total of 981,000 pounds, against a total of 2,315,000 on the previous week, and 7,170,000 for the corresponding week last year. Sales since January 1 amount to 51,464,310 pounds against 154,455,500 pounds last year at this time.

IMPORTS AND SHRINKAGE.

The bulletin of the National Wool Growers' Association answers the following questions propounded by an inquirer:

1. What percent of wool do we import annually, outside of carpet wool, and from what country, principally?
2. What is the percentage of shrinkage in the world's wool clip, compared with last year?

ANSWERS.

1. During 1897 we imported 356,839,482 pounds of wool, about 34 percent of which was class 3, or carpet wool, the other 66 percent being combing and clothing wool. In 1896 the importations

of carpet wool were about 46 percent of the entire receipts. When all the mills in this country, which use wool of any description, are running on approximately full time, they consume, it is estimated, about 600,000,000 pounds annually. Our entire imports for 1897 (including carpet wool) were therefore nearly 60 percent of the amount consumed in full years. The principal localities from which we import wool (other than carpet) directly or indirectly, is Australia.

2. One estimate places the total quantity of raw wool available for consumption in 1897, exclusive of old stocks, at 2,304,000,000 pounds, against 2,263,000,000 pounds in 1896, an increase of less than 2 percent. No authoritative figures can be adduced as yet as regards the supply, for 1898, but it is estimated that the available supply exclusive of old stocks, will show a falling off of at least 70,000,000 from the previous year. It should be added that these figures cover all classes of wool, carpet included, and that the decrease of 70,000,000 pounds, just noted, will be almost entirely in merino. The clip in Australia fell off between 180,000 and 200,000 bales, the declines ranging from 15 percent in New South Wales to 5 percent in Queensland. In the United States there was a decline of about 5 percent, namely, from 272,000,000 pounds, to 259,000,000 pounds.

PRICES OF WOOL.

Please give prices of wool from 1882 down to the present time, and show what grades brought the best prices.—W. F. V., New Vernon, O.

The following prices are given by Mauger & Avery, New York, for the Eastern markets, and published by the Treasury Department in its last statistical abstract. The prices are for July each year, when the wool season is fairly under way:

	Fine.	Medium.	Coarse.
1880.....	46	48	42
1881.....	42	44	36
1882.....	42	45	34
1883.....	39	41	33
1884.....	35	34	30
1885.....	32	31	28
1886.....	33	33	29
1887.....	34	37	34
1888.....	29	33	31
1889.....	35	39	32
1890.....	33	37	29
1891.....	31	35	29
1892.....	28	34	30
1893.....	24	26	25
1894.....	20	21	18
1895.....	18	21	19
1896.....	17	18	17
1897.....	21 1-2	23 1-2	21

These figures are for washed Ohio fleece, which is subject to less variation than any other kind, and thus forms a better basis of values.

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until you have corresponded with us. We think we can demonstrate to you that this course **will be to your interest.** We are in a position to **sell your product direct to the manufacturer** because we are the largest handlers of wool in the west, and always have a sufficient stock to meet his demands.

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The Dairy.

CONDUCTED BY J. H. BROWN.

THE EDITOR'S DAIRY NOTES.

A HANDY PRIVATE CREAMERY.

We are asked to give dimensions and plan of a model creamery, for use on a farm where 20 to 40 cows are kept for butter-making purposes. The cream separator, churn and butter-worker will be run by power. "What is the best power to use?"

There are various plans and forms of building a structure for this purpose. Less material will be needed if the building is square, or nearly so.

Our own creamery is not a model one, but it is very handy for our purpose. It was first built 12x14 feet square and eight feet to the eaves. At that time it seemed plenty large enough.

Then we were milking but seven or eight cows, used a hand separator, hand swing churn and small butter-worker.

But when we increased the milking herd to 15 and 18 cows, we began adding more machinery, and soon were badly cramped for room.

We then built on an addition 12x20 feet, with no break in the roof, making the building now 12x34 feet. This seems narrow and long, but it is very conveniently arranged.

However, as previously stated, were we to build a new and complete structure, we should make it, say, 16x24. Much would depend on the size and amount of machinery to be installed.

ARRANGEMENT OF FLOOR SPACE.

The front room of our creamery, 12x14 feet, is used for churning, working and printing the butter. In the northwest corner of this room is the cooling room, or refrigerator. This is 4x6 feet in size and seven feet high inside.

Back of this room, connected by one narrow door, is the separator room. This is 10x12 feet. It also contains the upright boiler, table and rack for milk cans and the turbine Babcock milk tester.

The rear room is just large enough to contain the two-horse tread-power. A line shafting extends the whole length of both churn and separator rooms.

If more information is wanted, we can make a sketch of our creamery, with outline of floor space as occupied by the machinery. The editor erected the building himself and set up all line shafting, the boiler, tread power and machinery, unassisted, working a portion of the time during night hours. On this account the "plant" cost much less than it otherwise would.

As to the best power for a creamery, we prefer steam, if for 10 to 20 cows or more. Hot water and steam are imperatively necessary in such a building and we could not now think of doing without the boiler.

For power alone we prefer our tread power to anything else. It is always ready, runs perfectly smooth and it takes but a minute to start at any time. A horse is always ready and we can start or stop any implement from any portion of the building without going near the tread power.

TRY DEEP, COLD SETTING.

I wish your advice on butter-making through The Farmer.

We keep four cows and have always used milk pans. I would like to try some different way. What would you suggest?

Have not the means to buy anything elaborate. We have no ice, have plenty of good water, but it is not so very cold—42 degrees.

Some like the way of diluting the milk with an equal volume of water. I do not know what the process is called. Would our water be cold enough? Husband thinks that would make too much and too thin swill.

Your advice will be gladly received.

Wayne Co., Mich. M. E. S.

If you can secure water from your well at a temperature of 42 degrees, you are indeed fortunate.

We advise you to drop the shallow pans for all time. Try the plan we advocated last winter. Use a large cask, or make a tank to hold the water. Get "shot-gun" cans of your tinsmith, eight inches in diameter and 18 inches deep.

Strain all the milk into one or two cans as soon as possible after milking. Have the cask or tank filled with cold water just before setting the cans of milk therein.

If you have no windmill, pump fresh water into the tank every night and

morning, at least, and running water is better. Skim after standing 24 hours.

BUTTER IN WASHINGTON

There is no earthly reason why butter in this state, be it dairy or creamery, should not be of the best. The climate is in its favor, also the food and the water, and the price paid should be an incentive to the producer to put only a good article on the market. We have been buying butter for the past two months of a neighbor. It was not properly made and would not keep—grew stale soon. He would not take his butter to Hartford, because the one grocer there would not buy poor butter. If all grocers would do likewise, poor butter would soon be a thing of the past.

When I lived in Ohio, in town, I bought a three-gallon jar of butter of a farmer for winter use. Two inches of the top was good butter; all the rest was poor. I supposed he was an up-to-date, honest farmer.

Good products will sell at good prices, be it butter, milk or eggs. But you must get the confidence of your customers. A farmer here went to a neighbor of mine and said: "I will sell you potatoes at 90 cents a sack because you are a good customer, but don't tell anyone else." He went to the next neighbor and was followed by the first, she going in at the back door and he at the front. She got there in time to hear him say: "I will sell you potatoes at 80 cents a sack, as you are a good customer, but don't tell any one."

A man here sells milk at 16 cents a gallon. He skims the night's milk and puts it in with the fresh morning's milk. We have got one cow and sell all the milk we can spare at five cents a quart. I could take all the 16-cent man's customers had I the milk. People prefer a fresh, genuine article at a higher price. Our customers in town, to whom we sell vegetables, always wait for us, knowing that they will get a good article. It pays to be honest.—Mabel H. Monsey.

Many Fail; One Succeeds.

"A scientific marvel" is what the best mechanical judges say of the SAFETY HAND SEPARATOR. Many consumers have tried to put out machines equally as good. They have tried to capture the farmers' trade by lower prices, only to find out, when too late, that a good separator can not be made for less money. It has no real competitor.

BRANCHES: P. M. SHARPLES, West Chester, Pa.
Elgin, Ill.
Omaha, Neb.
Dubuque, Ia.

A GIFT FOR EVERY Butter Maker

"How to Make Gilt Edge Butter"

a valuable new book by Josiah D. Smith, of Delhi, N. Y., one of the most successful dairymen in New York, and a well-known writer on dairy topics, will be sent free to users of

Diamond Crystal Salt

This book is designed to meet the needs of the private home dairy, and cannot fail to be of great service, even to those who have had considerable experience. It is nicely bound in a waterproof cover, so that it can be used in the dairy room without damage, and it is printed on good paper. It will be sent free and prepaid to any one who will cut out and send us from the back of one of our butter salt bags (either the 14 lb., 28 lb., or 56 lb. size) the trade mark words:

"The Salt That's All Salt."

This book should enable you to improve the quality of your butter, but a greater improvement will follow the substitution of Diamond Crystal Salt for inferior butter salts. Will you join the successful dairymen who use "The Salt that's All Salt"?

Diamond Crystal Salt Co., St. Clair, Mich.

Wide Tires Make Good Roads.

GOSHEN

LOW WAGON WHEELS

have wide tires—3 1/2 to 6 in. Just see how it's made—layer upon layer of kiln dried Indiana White Oak, cut wedge shaped, grain running from hub to tire. Look how it's riveted. Look at the broad flanges with bolts running clear through.

KELLY FINDRY & MACH. CO. Circulars do. free.
16 First St. Goshen, Ind.

The Horse.

CONDUCTED BY ROBERT GIBBONS.

HORSE GOSSIP.

The new rules of the National Trotting Association will cause considerable trouble at harness meetings this season. Mr. D. J. Campau announces that the new rules will not be enforced at the Blue Ribbon meeting in this city, and he and Mr. Fasig, of Cleveland, who are managers of the grand circuit meetings at Hartford, Conn., announce that these rules will not be enforced there. We shall see if the National Association enforces its rules against members violating them. The rule reads as follows: "It shall be the duty of each associate member to see that the rules, regulations and by-laws of this association are rigidly enforced upon their respective courses under penalty of suitable fines or expulsion. Members shall be held responsible before the Board of Review for any violations of the rules of this association."

The present owner of Joe Patchen, the great pacer, thinks the horse can lower his record this season and here are his reasons: "He was timed separately in his race at Springfield, Ill., last October, with Star Pointer, in 2:00 1/4, and at that went the mile on the outside of the track. Pointer beat him out for the heat, which was paced in 2:00 1/4. I think that if Patchen had been at the pole that day he would have won the heat, because he practically went faster than Pointer; then again, I think that Patchen is in better condition this spring than he was last year. I have been very careful in wintering him, and he looks fit and right now for a race." But Joe Patchen has been campaigned so persistently ever since he was old enough to race, that we believe that he has seen his best days, and will never equal, let alone better, his present record. There was never a gamer or better horse entered in a race and he should make a great sire.

Hans McGregor, by Black Hawk McGregor, a son of Robert McGregor, won a race at the recent Point Breeze meeting in 2:12 1/4, 2:12 1/4, 2:11 1/4, the three fastest heats trotted this season. He is the first horse to enter the 2:15 class in 1898. The dam of Hans McGregor is Juno, by Ben Hatch, a son of Gen. Hatch, the sire owned in Iowa for many years. Hans McGregor was born in Kansas, the land of drouths, cyclones, and political upheavals, and is naturally a sensational horse.

Last week's receipts of horses at Chicago were the largest on record for this season of the year. The total reached nearly 4,200, or about 1,000 more than the previous week and 2,000 more than the corresponding week last year. The arrivals were largely of common to fair grades, which sold largely at \$60 to \$100. Comparatively few drivers or drafters sold above \$150.

Monday of this week was the last day allowed by the government for the inspection and purchase of horses for the recent order of 1,120 head for army purposes. Prices for such animals as suited ruled strong, sellers obtaining around \$125 for 1,250 to 1,400-lb. geldings of lasting quality and powers. These horses are to be shipped to Tampa immediately. The trade in other classes of horses was sluggish, with a large supply on hand. In fact, the offering of horses is the largest ever known before at this season of the year and at the close of the buying on government account the general market ruled weak and depressed, with the chances in favor of a big slump, particularly on such grades as have been sent to market to be utilized for cavalry purposes.

VETERINARY.

Ringbone.—I have a horse that has a bunch on fore pastern joint just above hoof. He is not lame. H. W., Ypsilanti, Mich.—You had better leave it alone if it does no harm. By treating him you might cause a lameness that would be long and tedious to cure.

Knee Sprung.—I have a horse five years old; little inclined to stand over on knees. He has been driven but little. Should he stand on level floor or not? W. H., Lansing, Mich.—Yes, he should stand on level floor. He should level and not overdrive. He will be benefited by blistering tendons with caustic balsam twice a month. If you do not care to blister him during hot weather shower limbs with cold water and defer blistering until cool weather sets in.

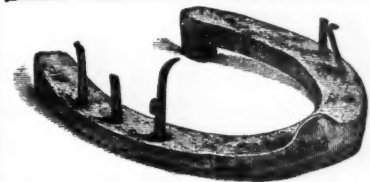
Cow Gives Bloody Milk.—Three year-old cow had her second calf a short time ago. She gives bloody milk from one quarter of udder. Have given her some saltpeter. H. C. D., Ada, Mich.—Foment udder with hot water three times a day. Use a milking tube. Be careful when you milk her and not injure udder. Blood comes from quarter of udder as the result of injury in many cases. Apply 1 oz. acetate lead, water 1 qt., three times a day. Try to ascertain the cause and remove it.

Colic—Diarrhea.—Horse has colic occasionally when he stands in stable; his bowels act all right when I drive him. Colic frequently follows diarrhea. N. J., Jeddo, Mich.—You can do a great deal towards keeping your horse well by careful feeding and watering. He is not sick. The motion of body when he travels causes his bowels to act too freely and he may be nervous. Give less water before you drive him. Give him 1 pt. raw linseed oil and repeat it daily until bowels move freely without exercise. Give ground ginger in feed. A run to grass might be of as much benefit to him as medicine.

Sprain of Flexor Tendons.—A mare is lame in fore leg; the cords on back part of leg from fetlock to within about two inches of the knee joint are badly swollen; not much fever but too lame to work. Does not press heel to the ground. J. D. L., Kingsley, Mich.—Give her rest and apply a blister of caustic balsam to back tendons once every 10 days or 2 weeks. It is a sprain. In blistering her make application from knee to hoof on back part of limb.

GUARANTEED CURE for Bone Spavin, Ringbone, Curb, Curb, Splint, one bottle will effect a permanent cure or money refunded. Never has been known to fail, no matter how chronic the case may be. Price \$1 a bottle. Address Toledo Spavin Cure Co., Toledo, O.

SHEPHERD PONIES. Every one Pure Bred. prize on "ponies in harness" at World's Fair. Forty for 1898 market. Well broken ponies for children's use. Little foundation broken for breeders. Also imported stallions. Pays better to breed pure Shepherd Ponies than any other animal. Write your wants. WATKINS FARM, Detroit, Mich.



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Hot Forged and Hammer Pointed, as in the old hand process, without rolling or shearing, from the best Swedish iron rods. They are the only nails that hold the shoe.

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"Supreme Excellence in Material, Process and Quality of Finished Product."

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Call on your shoer for the BEST.

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Neponset, Boston, Mass.

Mascot Ring on receipt of 10c. in Stamps.

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Caustic Balsam

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A Safe, Speedy and POSITIVE CURE.



Prepared exclusively by J. E. Gombault, ex-Veterinary Surgeon to the French Government Stud.

SUPERSEDES ALL CAUTERY OR FIRING

Impossible to produce any scar or blemish. The safest best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunions or Blemishes from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, Etc., it is invaluable.

WE GUARANTEE CAUSTIC BALSAM will produce more actual results than a whole bottle of any liniment or spavin cure mixture ever made.

Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by Druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

Farmers' Clubs.

CONDUCTED BY A. C. BIRD,
Higland, Mich.

IS THERE DANGER IN THE JULY-AUGUST TOPIC?

The idea is certain to be suggested in some quarters that the discussion of the topic "The farmers' duty regarding the nomination and election of members of the legislature" will introduce partisan politics into the clubs. It need not. It must not. It will not. It is a plain business proposition. It simply asks the question, "What kind of a man do we need in this crisis?" The lines are clearly drawn, not between the Republican and Democratic parties but between the friends and enemies of just and equitable taxation. Influential members of both the great parties are found on either side of this question, and its settlement will never be by party fiat. Regardless of party affiliations every man must settle for himself "which side am I on?" And it is no reflection on any man's faith in his party whichever way he decides.

Never has there been such an opportunity for the farmers of Michigan. With a retiring legislature which, neither in its regular nor in its special session, scarcely once in all their deliberations divided upon party lines, and with the certainty that in this respect their successors will be like unto them, practical men cannot afford to be too closely held by party lines, neither will they be so held.

On this account and for these reasons is the July-August question announced. A great work is to be accomplished and the farmers' clubs must be in the vanguard.

THE FARMERS' CLUB PICNIC.

It may well be doubted whether any other feature of Farmers' Club work during the summer months is of so great importance as the annual picnic. Bringing together as it does not only the members of a single club but also many from the neighboring clubs, and more important still, a large contingent of farmers, who for some reason or another have failed to identify themselves with the movement, an opportunity is created from which good results are sure to follow. The organization of scores of new clubs may be traced to these annual gatherings. Many a club can trace the beginning of a new and healthier life to their influence. Thousands of club members insist that their interest in the work dates from the first club picnic they attended.

And so we would say to every Farmers' club in Michigan. Do not fail to hold a picnic some time during the coming two months. Advertise it well. Make your invitations cordial and have them include everybody. Make your arrangements early and make them carefully. Do not disappoint your visitors or yourselves. Merit the confidence imposed in you by your guests. Have something good to entertain both old and young. Have something better to elevate and instruct. See to it that all may, if they so desire, carry new and valuable thoughts as well as pleasant memories home with them. A good speaker can be easily secured either from within or without the club. No club lacks for music within its own ranks and outside assistance is easy to obtain. Grounds must be secured, swings put up, seats provided, perhaps boats secured and countless other details must be faithfully attended to if you would succeed.

This means work for every club member. It means hard work for some. But is a work that brings a rest to both mind and body after it has been well performed.

In many places it is now easy and exceedingly pleasant for two or more clubs to unite for this event. A double value results from such a meeting and wherever such an opportunity presents itself it should be embraced. In one or two counties where county associations have been formed all the clubs in the county will unite in one grand gathering. The success of this plan is as yet an unknown quantity but we have great faith in the new idea. It means more work and added responsibilities, but if successful the reward will be correspondingly

greater when the final account is cast up.

For rest, recreation and profit the Farmers' Club picnic presents almost infinite possibilities. We base our faith on the experiences of bygone years.

REPORTS FROM LOCAL CLUBS.

WALES FARMERS' CLUB.

June club met at the home of I. P. Green. The viewing committee reported on Mr. Mason's farm to the effect that barns, fences, cattle and sheep were all in good condition, and a new and well-planned hen house on the farm.

"The Pure Food Law," was opened by Representative O'Dett. He strongly advised the farmers to do all in their power to aid Commissioner Grosvenor in the enforcement of the pure food and dairy laws. Mr. Gibbons: The farmers can aid the commissioner by reporting the purchase of adulterated foods if the same were purchased for the pure article.

The June Association topic, "The duty of the farmers regarding the temperance question" brought out a lively discussion and it is greatly to the honor of the Wales Farmers' Club that not one of the men had a word in favor of the liquor business. Messrs. Green, Dunn & Hand would work for the enactment of an anti-treating law and high license. The sentiment of the club was expressed in the following lines:

There is a little whiskey shop that every man can close,
And that little whiskey shop is just beneath his nose.

A committee was appointed to revise the by-laws. Next meeting at the home of J. M. Reuckes on July 1st.

MRS. ALBERT HAND, Cor. Sec.
St. Clair Co.

ARBUTUS FARMERS' CLUB.

May meeting at the home of Mr. and Mrs. Miles Colvin the 28th inst. A very pleasant time was had with 38 in attendance. Topic for debate "gardening," led by Jessie Merritt. A lively discussion followed, bringing forth many good points. Ladies as well as gentlemen showed a great interest. All agreed that the soil should be made fine and also that the fertilizers used should be well pulverized. The majority present seemed to think that the proper place to plant seeds was in the ground and not in the moon, believing the signs had nothing to do with a good garden. Next meeting at the home of Mr. and Mrs. Orin Royce, June 25.

Oscoda Co. COR. SEC.

DUNDEE FARMERS' CLUB.

June club met with Mr. and Mrs. L. J. Ostrander; Topic "How to make home more pleasant," led by Mrs. Joshua Kent. The opening paper was so complete in its treatment that little discussion followed. A paper "Who was watching the gap?" by Mrs. L. B. Smith, followed. No club meeting in July or August. September meeting with R. I. Ingraham.

Monroe Co. M. D. L., Cor. Sec.

CLYDE AND GRANT FARMERS' CLUB.

May session entertained by Mr. and Mrs. Edward Phillips. A paper by Mrs. Clump on "Helps in The Farmer's home" called forth a spirited discussion, attesting to the fact that this vexed question is far from its solution among our members; also, that the husband shares with the wife in the difficulties of the situation. Rev. H. Nanknois considered the majority of people governed by circumstances according as their opinions are formulated to agree with those of the persons with whom they associate. Several gentlemen agreed with him, citing their own observation and experience in support of this conclusion. Mr. Myron: "Inherited traits of character will tell upon the success of the individual." Mrs. Henry Kingsley was afraid of the critics and so read Ella Wheeler Wilcox's "It might have been," as a synopsis of her opinion. Mrs. F. O. Reynolds read a fine paper in favor of "Effort." Jos. Gibbons: "Give me a man of will and I care not for the circumstances." Miss Westbrook: "Unscrupulous effort succeeds; conscientious effort as often fails." Mrs. Alice McKay, critic, thought the discussion was well sustained and especially to the point by the ladies, who were all arranged on the side of effort. Altogether the meeting was an entertaining one. June meeting with Mrs. Clump, the 22d inst., children's day.

MRS. O. MCKAY, Cor. Sec.

St. Clair Co.

MERIDIAN FARMERS' CLUB.

June meeting with Mr. and Mrs. De Camp. Association question taken up by Mrs. M. M. Martin. She said, among other things, "The temperance movement, like any other movement that would do effectual work, must be organized. The demon of intemperance is like the fatal Upas tree, twining its roots into all our various interests, killing and blasting everything with which it comes in contact by its contaminat-

ing influence; its roots are sapping the very life of the nation. It is more of a foe than the hostile Spaniards. If even a moiety of the war enthusiasm and war cost were put into the temperance cause there would soon be as vast a change in the aspect of affairs, as organized mind is greater than organized physical power. The sale of alcohol deals out desolation, disaster and death; its results are shiftlessness, indolence and incapacity. The only financial gain is on the inside of the bar, while all its loss is on the outside. The people look to the farmers as one of the chief factors in ridding the nation of this dark blot; if they withdraw their support from any party it loses much of its strength. They are the backbone of any movement.

Rev. G. P. Mitchell read an able paper on the subject. He thought that the attitude of the farmer toward the question should be the same as that of every other right-minded person; that is, one of uncompromising hostility. It is not enough that farmers as a class are temperate, but they must become actively engaged in this battle for the right.

The subject was thoroughly discussed, but still the question remains, how shall we kill the liquor traffic? It is a stupendous question, admitted to be larger than can be handled. Something like the Indian trying to lasso the locomotive, thinking it to be a new kind of buffalo. Club next meets with Mr. and Mrs. G. P. Mitchell, July 1st.

MRS. J. B. MORRISON, Cor. Sec.
Shiawassee Co.

NORTH VERNON FARMERS' CLUB.

Mr. and Mrs. Peter Patchel entertained the club June 1st. Paper read by Floyd Owen on "The benefits of our Farmers' Club, are they greater than they cost?"

He thought the cost was highest during the summer months, as farmers were then more than busy, but that the time spent in social and intellectual pleasure could not be said to be lost. One of the greatest benefits is in becoming accustomed to speaking in public. Another is organization.

"Would it be advantageous to annex Cuba, and what would be the probable outcome if European powers should interfere between the United States and Spain?" was the subject for general discussion, led by Rev. S. Stevens. He thought it would be advantageous, providing we are to go into the colonization business; if not, he would say no. Other speakers agreed with him, providing Cuba desired it, but thought there was no danger of European interference.

We next meet on June 6th with Mrs. S. Kenyon.
REPORTER.
Shiawassee Co.

MANCELONA AND CUSTER FARMERS' CLUB.

At the meeting of May 18th the question: "What is truth?" was talked upon by Mr. Davis. A committee of three was appointed to prepare a program for the young people for the next meeting. Thirty-eight members in attendance. Next meeting with Mr. and Mrs. Swackhammer.

Antrim Co. E. D. ELDER, Cor. Sec.

SOUTH JACKSON FARMERS' CLUB.

May meeting convened at the home of Mr. and Mrs. W. D. Ford. Principal question of the day "The dairy and pure food law and the farmer's relation thereto," was taken up and very ably discussed by the different members present. A resolution was duly drawn by the committee in accordance with said discussion for the enforcement of said law by Chairman Goldsmith for the approving action of the club. Many remarks followed and the decision reached was, that the club defer action until the June meeting at which time due notice will be forwarded to The Michigan Farmer.

Jackson Co. CECILIA C. HATCH, Sec.

VASSAR FARMERS' CLUB.

Club entertained May 19th at the home of Mr. and Mrs. Wm. Perry. Mr. Hill, one of our business men, in his usual happy manner, told us "What he knew about farming." He thought some of the happiest days of his life had been spent upon a farm. "The relation of the school to home and society" was ably treated by Mrs. Wellesmyre.

Mr. Garner read extracts from Commissioner Grosvenor's article on "Our food laws," which was followed by an interesting discussion. P. L. Varnum thought the State was doing a good

work which was much needed. Rev. Mr. Lawrence gave a most pleasing and helpful address, which was enjoyed by everyone. There is no abatement of interest in the Vassar Club.

Next meeting with Mr. and Mrs. Chas. Wells.

MRS. M. L. LIVINGSTON, Cor. Sec.
Tuscola Co.

WHITE LAKE FARMERS' CLUB.

Regular meeting June 4th with Mr. and Mrs. Jno. Beaumont. Association question opened by E. P. Flower. He was disappointed in not seeing in The Michigan Farmer an editorial on the subject. We are all aware of the large amount of crime for which the liquor traffic is responsible and the large amount of misery which it entails. The old parties seem afraid through fear of losing votes and power to come out in condemnation of the awful business and its results. There remains, then, the alternative of casting a ballot against the traffic through one of the parties which is squarely pledged to its annihilation. W. E. Clark: "The temperance sentiment is growing, notwithstanding the assertions of many to the contrary." He hopes to see the liquor traffic suppressed during his life time by legislative enactment, or otherwise. R. England: "There is a responsibility resting upon each individual to use his influence and to do all in his power for the downfall of the traffic." Mrs. Bartholomew: "The Christian voter would, if consistent with his profession, cast his ballot in the opposite direction to that of the saloonkeeper." The question was discussed at considerable length and the following sentiments were mentioned by other speakers: Forcibly impress upon your children the importance of temperance and the evils resulting from intemperance. Agitate the subject at all practicable times and places. Vote for temperance men and laws whenever an opportunity is open. By all means have charity for others who desire the triumph of temperance and righteousness, though they may differ from you as to methods and means of working.

The club accepted an invitation to hold a joint picnic on July 4th with the Rose Farmers' Club at Rose Centre. August meeting with Mrs. and Mrs. Carl Voorheis.

Oakland Co. J. J., Cor. Sec.

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THE MOST Successful and Satisfactory power for running Cream Separators, Churns, Pumps, because it has a Governor which regulates the speed to a nicety. A successful power for running small Grinding Mill, Feed Cutter, or any machine, because the largest horse can work in it with ease. SIMPLE, EFFECTUAL AND LASTING. We make 2 and 3 Horse Tread Powers, also Enlarger Cutters, HERR AND AMERICAN FEED MILLS, Shellers, Wood Saws, Sweep Powers, THE CELEBRATED GOODHUE WIND MILLS, etc. Our 150 page illustrated Catalogue SENT FREE.

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All makes and models, must be closed out at once. New '97 models, guaranteed, \$9.75 to \$18; shopworn and used wheels, \$5 to \$12; well '95 models, \$12 to \$25. Great factory clearing sale. Shipped to any one on approval without advance deposit. Handsome souvenir book free.

EARN A BICYCLE by a little work for us. FREE USE of sample wheel to rider agents. Write at once for our special offer.

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WHAT

part of a wagon wears out first? The wheels, of course. Why not buy wheels that can't wear out?

When a man buys the **ELECTRIC WHEELS** he always has good wheels on his wagon. They can't rot, warp or become loose; no re-setting of tires; they fit any wagon. We also make wheels to fit anything wearing wheels. Send for circulars and prices.

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The Improved U. S. Cream Separators

In thoroughness of separation take the lead. In completeness of design and ease of operation excel all others.

Are more substantially made and are superior in all points to all others.

All Styles and Sizes. \$75.00 to \$625.00.

Agents in all dairy sections.

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VERMONT FARM MACHINE CO., - Bellows Falls, Vt.

The Poultry Yard.

POULTRY COMMENTS.

At this season of the year, as is usually the case, one of the perplexing difficulties is how to dispose of the lice, and after they are, to keep clear of them. Kerosene is usually the remedy recommended, and when used in liberal quantities is one of the most thorough disinfectants, for a simple thing, that I know. We have used kerosene about the roosts and dropping-boards a considerable time, and with good success; for a cheap dose and one that is usually at hand, there is scarcely anything better for the average farmer. Of course, in this connection I am not referring to any of the several brands of liquid lice-killers that are on the market, the majority of which are doubtless good, although a little too expensive for the average farmer.

Some four or five years ago we purchased a barrel of crude petroleum, the same as is used in factories as fuel for the boilers, with the original idea of using it to mix with paint instead of regular oil, for painting rough lumber. Only a portion was used for this purpose; the balance I have been using instead of kerosene in destroying lice. I have found that it is most excellent for this purpose, as the odor that it gives off is very offensive. Kerosene is bad enough, but this is far more disagreeable to human nostrils, and it certainly must be the same to vermin. At any rate, I know that wherever it touches, lice are sure to disappear, and all that is necessary is to get things thoroughly infused with it to make everything practically lice free. It has one prominent advantage over kerosene, and that is in the fume that it constantly throws off. This in itself is a powerful factor in its success as a lice exterminator. I do not know that I would recommend any one to buy a barrel of this merely to disinfect the poultry house, although I do believe that anyone would not be the loser in the end, by so doing. But if anyone has an old building or two which they would like to paint, more for the looks of things than because the building really needs it, I am sure that for a cheap paint, this oil mixed with Venetian red or some similar compound will make a paint both cheap and comparatively durable. Then, if there is some over, it can be worked into the poultry house very nicely as a disinfectant. As a rule, it is not expensive nor hard to get if an arrangement is made so as to get it some time when a carload lot is being unloaded. I do not think, as a general thing, that it can be purchased at any place of business as an article on the regular market, being procured almost exclusively as a fuel in large manufacturing concerns. Prices will vary, but as a usual thing I think that it can be purchased for about \$2.50 or \$3 per barrel of fifty gallons.

If anyone has in mind something more in the line of a "liquid lice-killer," perhaps something that appeared in an issue of The Poultry-Keeper some two years ago will be more appreciated. The editor, P. H. Jacobs, says: "Many of our readers, who pay from \$1 to \$2 per gallon for some of the disinfectants, may easily prepare them at home if they know how. The odor of crude carbolic acid is always recognized, for it is the crude acid that gives results. But crude carbolic is of an oily consistency, and will not mix with water. Take a pound of hard soap, slice it and dissolve in two quarts of boiling water. While the water is boiling hot, add a gallon of crude carbolic acid, churn briskly or agitate in any manner (some use a sprayer), until a creamy mass results, which will be in about five or ten minutes. This mixture or emulsion, when water is added to it, turns milky. A pint of the mixture or emulsion, added to four buckets of water, makes an excellent wash for animals, destroying fleas, lice and parasites. The poisonous properties of the acid are more or less neutralized by the soap, a carbolate of soap being formed. It is made in the same manner as kerosene emulsion, only that the acid is used instead of the kerosene. Always use twice as much acid as water in preparing the mixture. The cost will be about 50 cents per gallon." In closing, Mr. Jacobs says further: "The kerosene emulsion is much cheaper and answers about the same purpose in destroying insects and parasites. As stated above, the kerosene emulsion is made the same as the carbolic acid mixture. Those who wish a cheap, and yet an effective 'liquid lice-killer' will find in

the above recipe something that will doubtless answer a good purpose, at a small expense."

"On a farm of 255 Brown Leghorns, 85 are reported broody in April."—Farm-Poultry.

I take the above clipping from the "experimental club" department of the issue for May 15th. It is remarkable from the fact that this variety is one of the subdivisions of a breed that is noted for being "non-setters." It is very doubtful if any breed has a right to be dubbed as being entirely free from this natural propensity. To a very great extent certain breeds are particularly gifted in this direction, while others are to a proportionate degree wanting. The Brown Leghorn has the name of being at the head of the Leghorn family as egg-producers, the white variety is supposed to be second to them in eggs but superior to them as they average in size. Considering this difference it would seem as though the Browns would be superior to the Whites as non-setters, but from my own experience this is not the case. The last of our Brown Leghorns were disposed of last fall; during the summer, out of some twenty or twenty-five two-year-olds and yearlings, fully a dozen became broody. Some of them were given eggs and did as well as any hen of any other breed could have done, while others were a complete failure. Out of the same number of White Leghorns, which had practically had as good a chance as the Browns, (in fact, during the latter part of the season they all ran together), I do not recall more than three or four that became broody. Still, of the two varieties which I refer to, I think that the Browns, although they showed a greater inclination to incubate than the others, produced more eggs than the white variety. I believe that the broodiness was a direct result of excessive egg-production, and probably, had my White Leghorns produced as many eggs they would have shown a greater propensity to become broody, although it is possible that this theory is entirely wrong; at any rate, it will apply only to varieties of the same breed, and would scarcely argue that an excessive setter was also an abundant layer. I think that this explanation will suffice as a reason why over 33 per cent. of the hens in the flock referred to in Farm-Poultry became broody, although all were of a so-called breed of non-setters. I dare venture that if the facts of the case were known that it would be apparent that the 33 per cent. which became broody, produced quite a considerable portion more than 33 per cent. of the eggs laid during the season. Still, perhaps, even in this I am wrong, but it seems reasonable to suppose that the greatest workers would be the ones that would require the most rest from their labors; broodiness is nothing more than a way which nature has provided that the productive organs shall be given the necessary relaxation. Then, if such is the case, why is it not reasonable to assume that the flock of Leghorns that shows the most pronounced inclination to broodiness has been the one that has done the most in egg-production. It seems to me that this supposition is very reasonable.

On the same page of Farm-Poultry, I note the following, also: "Hatched sixty chickens from sixty-six eggs set under hens; one rooster with forty pullets." There is a great deal in the above, and I have not a single doubt of the truth of the statement, as it only bears out my own experience in mating flocks. I am well satisfied that in the average farm flock from two to ten times as many males are used as there is any need of. With yarded flocks the matter is entirely different. There is but little doubt that in such cases either the number of males must be increased or the proportion of hens to the cock decreased. Of either I should prefer the latter, especially if the keeper is paying considerable attention to improvement, either for markings or for general utility. If little or no attention is being paid to either, the matter of one or more males is of but minor importance.

One good, vigorous, pure-bred cockerel or yearling cock is sufficient for a flock of forty hens of any breed, save, perhaps, some of the Asiatics. I am not at all sure but what it is entirely sufficient for either the Brahma, Cochinchina, or the Langshan, but can not say definitely, as I have never made the experiment. But were I going to keep any of the above breeds, and was able to give them free range, I should not hesitate a moment in giving that proportion a trial. If farmers as a rule

would invest in but one good, healthy, vigorous male, or two at the outside, unless their flock is unusually large, instead of getting from three to six, they would have more money in their pockets, just as satisfactory results in general, and better returns all round. It don't pay to keep a lot of useless males about when one or two is all that is necessary. It is all on the same principle of keeping a half dozen bucks about when only one really good one is required.

C. P. REYNOLDS.

REMEDY FOR PIP.

To the Editor of the Michigan Farmer.
Allow me to offer Grandma's remedy for the pip in answer to the May 28th number. Dampen and dip the fingers in a little fine ashes; take hold of the end of the fowl's tongue and, with a needle, beginning on the under part of the tongue, loosen the thick skin around its edges, pull it off quickly, and rub a little ashes on the tongue.

The skin will be almost like a finger nail.

I am fourteen years old, and the past year have been very much interested in poultry, and have followed the above method with success.

Washtenaw County.

MABEL COX.

For the Michigan Farmer.

FATTENING CHICKENS.

Poultry raisers who make a business of selling young chickens cannot do better than to study some of the methods which swine and cattle raisers adopt in preparing their animals for market. A fat chicken is always desirable, and a full plump body and limbs will go a long way toward finding a customer. Most of the chickens sent to market are lean and lanky. It is said that it is hard work to fatten a young chicken.

Is it so hard? I believe if the right methods are observed that it will be found an easy matter. A young chicken is prone to run around a good deal, and her nervous activity is apt to run off all fat. But three or four weeks before it is time to market the chickens confine them in narrow enclosures where they cannot run around much. Keep out all roosters or fighting chickens, for worry is sure to keep them thin. Only a few should be kept in each enclosure.

The pen should be a good one from every point of view. It should have a shady run and a sunny side so that the chickens can suit themselves a little. Preferably it should have some green growing grass or shrubbery. This helps to make life more pleasant and agreeable to the chickens. Everything to make their quarters comfortable should be added.

Now give them clean, fresh water once or twice a day, and all the fattening food they can eat. Muscle and bone-making food are not required. These can be eliminated entirely. Corn in various forms should be fed freely to them. Cooked corn, mashed and ground corn, and whole corn should be fed every day. Warm potatoes and bread crumbs will also make fat. Any kind of milk and a little sugar will help along the fattening process. The process must be hurried along as fast as possible, for during these days the chickens will eat considerable, and if they do not lay on fat every day it will be a losing operation. In the end, however, good returns should be made for all this trouble and expense, for the chickens will sell quicker in the market, weigh more, and generally bring the top prices.

Massachusetts.

C. S. WALTERS.

REFORM IN THE POULTRY YARD.

Our Barred Plymouth Rocks are generally put on short rations as soon as settled weather arrives. They have free range, but this season they were laying so remarkably well that we continued the daily feed of oats a little later. It also transpired that they gained access to shelled corn left in the bottom of the corn-cribs. A heavy rain came on and a pond of filthy water settled in a hollow in the barnyard and some of the fowls were discovered drinking from it. Only a couple of rods away were dishes of pure water, but with that strange perversity that sometimes marks the actions of people as well as fowls, they persisted in imbibing the filthy fluid, in spite of repeated "shooings."

Soon a dead hen was reported in the basement of the barn. I found the body and cremated it while soap boiling. It was so fat that it burned like a fire kindler soaked in kerosene, and I came near finding the soap fat in the fire in consequence. Soon another hen had the

dumps and a second cremation in a convenient brush pile became necessary.

Then I awoke to the gravity of the situation. The hired man, under protest, drained the barnyard in five minutes' time. I took all the broken crockery in the house and pounded it to the size of wheat kernels, on broad flat stones, in different parts of the poultry yard. The house had already been thoroughly cleaned, and perches saturated with kerosene oil.

Then I proclaimed a fast. Not a kernel of grain if the weather was fair, and only a few oats if it rained all day and prevented scratching. That night I hung a lantern in the poultry house and applied a liberal dose of "Death to Lice" to every fowl. There were less than forty but it required an hour and a half to do the job. But that is only one feature of the light and easy tasks that come to the poultry raiser. The next morning the fowls held an indignation meeting on the back porch while we were eating breakfast, and probably passed resolutions condemning my negligence, but I kept out of the way, and about 9 o'clock they adjourned and went hunting in earnest. At night, if I ventured out, the program was repeated and I was followed by flocks of angry biddies vociferously calling for supper. But they got none, and when their digestive organs recovered tone and the sharp grit did its work, the lice were banished and disease germs were exterminated. We found no more cases of dumps or dead hens.—Priscilla Plum.



Walking the Floor.

When a business man gets to the point where he cannot sleep at night, where he is so shattered of nerve that it is torture to even remain in his bed, and he has to get up and pace the floor—it is time for that man to bring himself up with a round turn. If he does not, it means nervous prostration and mental, if not physical, death.

For a man who gets into this condition there is a remedy that will brace him up, put him on his feet and make a man of him again. It is Dr. Pierce's Golden Medical Discovery. It goes to the bottom of things. It searches out the first cause. When a man is in this condition you can put your finger on one of two spots and hit that first cause—the stomach or the liver or both. This great medicine acts directly on these spots. It promptly transforms a weak stomach into a healthy one. It facilitates the flow of digestive juices and makes digestion and assimilation perfect. It gives a man an appetite like a boy's. It invigorates the liver. It fills the blood with the life-giving elements of the food, and makes it pure, rich, red and plentiful. The blood is the life current, and when it is filled with the elements that build new and healthy tissues, it does not take long to make a man well and strong. It builds firm, muscular flesh tissues and strong and steady nerve fibers. It puts new life, vigor and vitality into every atom and organ of the body. It cures nervous exhaustion and prostration. Nothing "just as good" can be found at medicine stores.

"I had suffered about eleven years with a pain in the back of my head and back," writes Mr. Robert Hubbard, of Varner, Lincoln Co., Ark. "I suffered for eleven years and spent a great deal of money for doctors and medicine, but did not get relief. Then I tried four bottles of the 'Golden Medical Discovery' and improved greatly. I sent for five more and now am glad to tell everyone that I am in good health."

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PAIRED P. ROCKS, Buff Leghorns, Black M. P. Rocks. Eggs \$1 per 21. Mammoth Pekin Ducks. 15 eggs \$1. E. L. LARNED, Worden, Mich.

EGGS. Heavy weight Light Brahmas. 15 for \$1. 30 \$1.50. Pekin Ducks, large 11 for \$1. 22 \$1.50. E. D. BISHOP, Woodbury, Mich.

EGGS. from large Toulouse Geese 30 cents each, and B. P. Rocks 13 for \$1. Chester White swine. AMY SOUTHWORTH, Allen, Mich.

SEND order for Pekin Duck Eggs, \$1 per 13. Poland-Chinas always on hand. Get 1898 catalogue. E. A. CROMAN, Box 99, Grass Lake, Mich.

BIG BEAUTIFUL BARRED ROCKS. Lambert, Pitkin & Conger strains; 22 B. P. R. eggs for \$1. Pekin Ducks, Rankin strain, \$1 per 11. E. M. KIES, Hending, Mich.

15 Light Brahmas, five Pekin Duck, and 10 B. P. Rock eggs, all for \$1.00. A BARGAIN. Don't miss it. F. M. BRONSON, Vermontville, Mich.

THE MICHIGAN FARMER

State Journal of Agriculture.

THE LAWRENCE PUBLISHING CO.,
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CLEVELAND, O. DETROIT, MICH.

CLEVELAND, SATURDAY, JUNE 18, 1898.

This paper is entered at the Cleveland Postoffice as
second class matter.

FIRE!!

THE ENTIRE PLANT AND PROPERTY OF
THE MICHIGAN FARMER DESTROYED BY
FIRE.

We have been working hard and constantly for the past four years to obtain suitable location and conveniences for the business offices, editorial department, mailing and printing departments of The Michigan Farmer; have had modern presses, folding and cutting machines manufactured expressly for and especially adapted to The Michigan Farmer; had just got the whole fully completed and working smoothly, in what was supposed to be a fire-proof structure—the new Case block—and were congratulating ourselves upon having the best location, most convenient arrangement and most complete modern machinery of any agricultural paper in America, when a few hours' conflagration last Friday night destroyed all. Not a vestige of anything was left after the awful fire, and a heap of smoking ruin was all that greeted us when we arrived at our location Saturday morning. Fortunately a copy of our subscription list, a little over a month old, was at our Cleveland office, and a large force of hands was at once put to work, and are working night and day, to set this list in type. As it will take nearly two thousand pounds of type to set these names alone, some idea can be formed of this task, but we hope to have the list ready for the mailing of this issue. This copy of the subscription list is every particle of our business records or property that we have remaining. But in a few hours after learning of our loss a business and editorial office was established for temporary work at No. 15 Atwater street, west, and as there was no place in Detroit prepared with facilities for doing the type work and press work we decided to do this branch of the work for a few weeks at our Cleveland, Ohio, office, where full machinery adapted to our work is in complete order. The paper will be fully edited and all business transacted at our temporary Detroit office, but the typesetting and press work will for a few weeks be done at our Cleveland office. We shall ask the kind indulgence of our readers for a few weeks only, for little delays or slight differences in the general makeup of the paper. We shall spare no labor or expense to make them as slight as possible. We used the telegraph liberally in ordering an entire new plant of machinery for The Michigan Farmer, but as it has nearly all to be made to order, to be adapted to our work, it will require a few weeks to complete it. We shall also proceed at once to obtain new quarters and at the earliest possible date fit them up and furnish them in every way fully equal to those destroyed. Our insurance will cover about one-half of our actual financial loss, but the most severe loss is our great accumulation of records, files, library, cuts and reference matter, that cannot be replaced. We know to a certainty that hearty sympathy and indulgence will be extended from our great family of readers and that they will also be glad to know that the loss will in no way affect the financial standing of this paper nor in the slightest degree injure our business credit. We have already made full contracts to re-establish at earliest possible date the entire Michigan Farmer plant every way equal and in some things superior to its condition before the fire.

VALIDITY OF A TAX TITLE.

The validity of a Michigan tax title was passed upon by the United States court the past week. A party at Grand Rapids purchased a tax title on a piece of property owned by a fire insurance company at Milwaukee, and valued at \$30,000. The amount paid for it was \$30.25, which represented an unpaid sidewalk tax. The company offered the purchaser a very liberal sum for his claim, but it was refused, he claiming the entire property. The case went into the courts, and the final outcome is that the sale by the State has been set aside on the ground that the company had not received notice of it, and giving the title to the company. Of course had the case been contested in the State courts, the decision would probably have been in favor of the holder of the tax title. But the decision of the United States court is really in accordance with justice and good sense. No citizen should be deprived of his property without his knowledge, and we have always believed that every tax law should stipulate that property could only be sold after the owner had been personally notified that a tax assessed against it had not been paid. The present system of collecting taxes against real estate gives too much opportunity for extortion and fraud under the guise of law.

THE RECORD IS MISTAKEN.

We notice that some of the western agricultural papers, which a few weeks ago were so strongly advocating the procuring of some breed of "bacon hogs," which would sell at as high as Canadian hogs, are now taking less radical ground, and expressing a doubt whether the increasing price for such bacon will repay the loss occasioned by the change from the hog which is in favor in the west, which grows rapidly and fattens at an early age, for one of slower growth. If it does it will be an improvement backward, and we never saw much improvement made in that way. The American Cultivator, though not located in a section where many bacon hogs are grown, was the first to sound the note of warning, and we are glad that the western papers are not being carried away with the idea that it may be possible to produce bacon that will sell for 1c. a lb. more to the packers, and may cost 2c. a lb. more to produce.—Chicago Record.

As a matter of fact the first agricultural paper that took the ground that farmers could not afford to change their breeds of hogs until bacon curers were willing to pay enough more for the class of hogs they wanted to make it remunerative for those who raised them, was The Michigan Farmer. In November last, and a dozen times since, that statement was made, and pains taken to point out the reasons why this was so. We always held the opinion that bacon hogs would be supplied in any quantity as soon as the prices paid for them showed that they could be grown at a profit. Another thing we believe in connection with this question, and that is, that the improved breeds which can be grown at two-thirds the expense per pound of weight, can be utilized in the production of bacon hogs by simply changing their diet and the conditions under which they are grown. It is more a question of management than of breed. A bacon hog is one raised on a larger range and on a mixed diet. Its activity is kept up while it is growing and its muscles developed at the expense of its fat. It takes a long time to develop such a hog, perhaps double what is required to produce a carcass of the same weight in the hog closely fed on a corn diet. Hence it should be worth fully 33 percent more in the market than the heavy lard hog. When the bacon curers are willing to pay this advance, bacon hogs will be furnished in any desired number. It is merely a question of prices, not of any lack of ability to produce them.

Official figures of the growth of the University of Michigan exhibit very clearly the popularity of this great institution of learning. The university started in 1841, with nine students in attendance, and one department, that of literature, science and the arts. It will close the fifty-seventh year of its history at the coming commencement with 3,114 students and seven faculties. The attendance, which increased very slowly in the earlier years of its existence,

nearly trebled during the period from 1870 to 1893. That this institution has reached its limit in attendance we do not believe. It has always been in close touch with the people through the democratic lines upon which it has been conducted, and we look for a steady growth and development as the people become prosperous and more fully alive to its great advantages.

THE COUNTRY IS PROSPEROUS.

According to reports from the bureau of statistics at Washington, the farmers of the United States, have, during the past year, sent abroad the largest exports, money value considered, in the history of the country. Even the year 1892, when agricultural exports reached the highest point ever known, \$799,328,232, will be surpassed by the record of the year which ends with the present month. It is estimated that the figures reached will be considerably above \$800,000,000, figures never before reached or thought possible. Only twice have they reached \$700,000,000, once in 1881 and again in 1892 as mentioned above. Compared with the last fiscal year the increase in exports of agricultural products will be fully \$150,000,000 and compared with the preceding year the increase will be over \$250,000,000, while the total will be fully 50 percent in excess of that of the fiscal year 1895. In bread stuffs alone the exports of the year will amount to nearly \$1,000,000 for each business day and will be more than \$100,000,000 in excess of last year's exports of bread stuffs. Nearly all articles classed as bread stuffs have participated in this increase. Of wheat the value of the exports for the fiscal year 1898 will be more than double those of the fiscal year 1897, while the increase in flour will be nearly 50 percent and of corn nearly 50 percent in value. May exports of corn were larger than those of any other month in the history of the country, while the total exports of corn for the year for the first time will pass the 200,000,000 bushel line, the total in only three preceding years having reached 100,000,000 bushels. Corn meal, oats, and oat meal and rye show a striking increase, the gain in oat meal being more than 60 percent over last year and that of oats 100 percent while in rye the gain is also phenomenally large. In "provisions," in which there are included beef, hog and dairy products, there is also a marked increase, the total exports of provisions for the year being likely to reach \$160,000,000 in value. Most of this increase, however, is in hog products. Exportations of bacon which were \$34,187,147 in value last year, are likely to reach \$44,000,000 this year, and lard showing a similar increase, being likely to reach \$37,000,000 this year, or a gain of nearly \$8,000,000. Live beef seems to be gaining in popularity with our foreign customers, the exports of beef and cattle having increased materially while those of beef, either fresh, canned or salted, have failed to show any increase, in most cases a decided falling off being noticeable. The exports of beef cattle during the first ten months of the fiscal year were 379,663 against 310,478 in the corresponding months of last year, while fresh beef in the same period fell from 242,168,034 pounds in ten months of 1897 to 227,434,373 pounds in the corresponding ten months of 1898. Salted beef shows a fall of 35 percent for the year, and canned beef from 46,349,006 pounds in the ten months of 1897 to 34,011,129 pounds in the ten months of 1898.

It is announced from Chicago that Joseph Leiter, who has been the head of the big wheat deal in that city for the past year, has practically failed. He was left with 10,000,000 bushels of cash wheat on his hands which had been bought at high prices. Joseph Leiter entered the market April 2, 1897, and immediately afterward the pressure of a tremendous power was felt, but no man knew whose was the hand. Leiter's first order was negotiated by Broker George B. French. It was for 100,000 bushels of May wheat at 70 7-8c. per bushel. Then his orders came thick and fast. The cheapest wheat bought by Leiter was 500,000 bushels, bought June 18, 1897, for September delivery, at 64 3-4c. The great deal ran fourteen months, during which time the price of wheat was down to 64 3-4c. in June 1897, and up to \$1.85 in May, 1898. It involved at one time an interest of more than 35,000,000 bushels of wheat. While he has undoubtedly met with very heavy losses, Mr. Leiter's operations have been worth many millions of dollars to the farmers of the United States, and we therefore regret that he has met with disaster in his attempt to hold up the price of American wheat.

THE WAR REVENUE BILL.

The war revenue bill is now a law. As originally passed by the house it was fully amended in the senate, went to a committee of conference and compromise and was finally passed by both houses in its compromise form and is now, June 11, a law. It was passed by a heavy majority and a non-partisan vote, those voting against it doing so because they could thus record their protest against certain features which they deemed unjust, and yet not risk the passage of the bill.

All loyal men will cheerfully submit to the tax wherever it reaches them. It will, of course, be more or less annoying and more or less expensive, but we went to war deliberately, by the will of the people, in a just cause, on behalf of the oppressed and the perishing, as a protest against barbarity and inhumanity at our very doors—not for greed nor for territorial extension but for the extension of human freedom and industrial progress; and the expense should be borne by all classes with patriotic cheerfulness.

It is estimated that the new law will increase the internal revenue of the government about \$150,000,000 per year, but is so largely and fairly distributed that the burden will fall severely upon none. Primarily it falls upon the rich—the bankers, brewers, sugar and oil refineries, on tobacco manufacturers and dealers, insurance companies, makers of proprietary medicines, freight and express companies, etc., etc. But it is easy to see that these great concerns will at once and in the main add the given taxes to the price of their commodities or services, so that the people at large will have to pay them.

Here are a few of the taxes: Bankers, \$2 for each \$1,000 of capital; brokers, \$50; theaters, circuses, \$100; tobacco, 12 cents per lb.; life insurance policies, \$1 on each \$100; leases, etc., 1 year, 25 cents; tea, 10 cents per lb.; proprietary medicines, etc., about 2 cents on the dollar; inheritance, from 75 cents up to \$5 on every \$100, according to remoteness of relationship; freight or express receipts or manifests, 1 cent; indemnifying bonds 50 cents, etc. The daily papers of June 10 give the complete schedule of the rates.

On the whole, our readers as a class will feel the tax less than most other classes. They are sellers more than buyers and the effect of the law, and especially of its currency features, will be to enhance the value of all prices—a net benefit to those who are net sellers of commodities. As a rule farmers use less of cigars, beer, liquors, etc., than city dwellers of the same net incomes. But wherever and whenever the tax does fall upon them we feel sure they will respond as patriotically and as cheerfully as any other class of citizens.

The cheese boards of New York state are taking steps to induce the war department to add cheese to the regular ration of the army. It is an excellent suggestion, and would be worth while adopting on hygienic grounds during the heat of summer.

Nelson P. Bowsher, president of the N. P. Bowsher Co. of South Bend, Ind., died May 21. He was born in 1845, near Ligonier, Ind., and moved to South Bend in 1871. He was a thorough mechanic, and filled positions in various establishments, among them the Oliver Chilled Plow works, in which he was pattern maker and master mechanic. He established a business of his own in 1882, and later took his sons into partnership. They gradually increased their business and specialties, and in 1894 removed to the present commodious plant and in 1897 the present stock company was organized. The two sons have been trained in the business so that it will go on without interruption. Mr. Bowsher was a member of the M. E. church and lead a Christian life. He was charitable and public spirited, and his loss will be deeply felt by all who knew him.

We are in receipt of the very handsome catalogue of the Putnam Nail Co., of Boston and Chicago. If a person has never considered the importance of a good horseshoe nail, he should send for this catalog, read and be convinced. The Putnam Nail is known and appreciated wherever good horses are kept. Its use means properly secured shoes, freedom from injuries caused by nails splitting when driven into the animal's foot, which very frequently causes very serious lameness, sometimes causing lockjaw. Then the quality and toughness of the iron from which this nail is made, the system under which it is manufactured, and the great care taken that every nail sent out from the factory is perfect, places the Putnam nail at the head of all others on the market. Every horse owner who cares for the comfort of his animal should insist upon the Putnam nail being used in shoeing his animals.

For The Michigan Farmer.

NOTES FROM THE FRUIT BELT.

The strawberry crop in Berrien county is now fairly on. Two weeks ago the season opened with one night's shipment consisting of five hundred crates, and before the week ended, one night's shipment showed 5,000 crates. This week's shipment opened up with Monday night's total shipment of over 5,000 crates, the heaviest ever known out of this port.

The week of daily showers accompanied by warm sunshine, has hastened the crop, swelling the fruit to mammoth size, until not unfrequently twelve berries fill a quart. The prices are surprisingly low, and our farmers hope for little above \$1 per crate. It is believed, however, by others, that for the later berries fruit growers will realize much better prices.

The large berry field of fifteen acres owned and managed by Jacquay & Ferry, also the West Michigan Nursery farm of 913 acres, both situated at Eau Claire, are turning out the best berries this year by the carload. Hundreds of pickers are employed on these two farms. The cherry crop will suffer from a week of occasional rain, and another week will find this harvest at its best.

The prospect for muskmelons in this vicinity is fine. Some of the oldest melon growers, whose fields range from ten to fifteen acres, declare the vines to have never been more healthy. In case of extremely dry weather in July and August, many of our best fruit growers have arranged for irrigation to save and develop their crops.

Peach trees are at their best. One year ago peach farms ten and fifteen miles from the lake, on account of the hard winter, bore nothing, and the owners say this rest will prove a godsend, for the healthy condition of the trees insures the best and most perfect peach in this year's crop. Curl leaf has done but slight damage. Little is ever seen of the yellows on farms where the trees have had a year of rest, while the crack nurserymen keep an eye on every shipment of trees that finds its way to their section until no San Jose scale is ever allowed to escape their notice.

J. N. REED.

Benton Harbor, June 13, 1898.

THE YEAR BOOK.

The "Year Book" of the Department of Agriculture for 1897 is a large volume, nearly 800 pages. From the various reports we glean the following for the benefit of readers who will not see the document or who have not time to glean for themselves.

Seven tons of imported beet seed were distributed to 22,000 farmers in 27 states, last spring, through the experiment stations, to ascertain where the sweetest beets could be produced. The results encourage the belief that in a few years we shall be able to produce our own sugar.

The meat inspection department of the Bureau of Animal Industry made 8,250,625 ante-mortem inspections of cattle, 8,044,355 of sheep, 448,983 of calves and 25,566,744 of hogs. There were condemned at abattoirs, 195 cattle, 757 sheep, 56 calves, and 12,858 hogs; rejected in stock yards, 24,951 cattle, 10,503 sheep, 3,597 calves, and 40,287 hogs. Total inspections of all kinds, 42,310,107. Total condemned at abattoirs, 13,866. Total rejected at stockyards, 78,838. The work was in operation at 128 abattoirs and packing houses, in 33 cities. In microscopic inspection for trichinae, 1,881,309 specimens were examined, and 13,325 found infected. The number of pounds exported was 43,572,355. It cost \$111,669.30 to inspect this pork, an average of 5.94 cents per specimen or about 2 1/2 cents per pound of such inspected meat exported. The number of live cattle inspected for export was 845,116, of which 1,565 were rejected; sheep, 348,108; rejected, 189. The total number of animals exported under inspector supervision was 390,554 cattle, 184,596 sheep, and 23,623 horses.

One of the most interesting experiments of the year was dipping Texas cattle to destroy the ticks, which spread the Texas cattle fever. It is found that paraffin oil destroys the ticks, without irritating the skin seriously. Twice dipping, a few days apart, kills all the ticks and the animals can be safely shipped to any part of the country. Some 20 years ago, when native cattle here at Cleveland and in the vicinity were dying of Texas fever, communicated from Texas cattle, Dr. Stuart, then our veterinary editor, stated that the contagion was communicated by the ticks, and he was laughed at by the wise ones. He was right, however, but a few years ahead of the time.

The weather service cost \$993,520 for the year and \$888,772 was appropriated for the current year. Climate and crop conditions are re-

ported from about 8,000 places; 4,315,000 maps were issued and daily forecasts and warnings sent to 51,694 places, by mail, telegraph and telephone. These warnings, it is claimed, save many millions of dollars every year, to agricultural and maritime interests.

NATIONAL CROP REPORT—June.

U. S. DEPARTMENT OF AGRICULTURE,
Division of Statistics,
WASHINGTON, D. C., June 10, 1898, 4p.m.

Preliminary returns of the spring wheat acreage, with the two Dakotas in particular subject to revision, indicate a total area seeded of 16,800,000 acres which, added to the area in winter wheat, 26,200,000, makes a total wheat acreage of 43,000,000, or rather over 3 1/2 million acres greater than last year. There is an increase of 8 percent in Minnesota, 22 in Iowa, 10 in Nebraska, 11 in North Dakota, 8 in South Dakota, 5 in Oregon, and 20 in Washington.

The average condition of winter wheat is 90.8, as compared with 78.5 at the corresponding date last year, and 81.6 the corresponding average for the last ten years. The principal averages are as follows: New York, 98; Pennsylvania, 96; Maryland, 98; Tennessee, 93; Kentucky, 99; Ohio, 87; Michigan, 97; Indiana, 95; Missouri, 96; Kansas, 104; California, 93.

The average condition of spring wheat is the almost, if not entirely, unprecedented one of 100.9, as compared with 89.6 on June 1, 1897, and 92.5, the average for the past ten years. Nearly all the states of principal production report a condition exceeding that indicative of a full normal crop, North Dakota reporting 104, South Dakota 103, Nebraska 105, Iowa 102, Minnesota 100, Oregon 101, and Washington 97.

The total reported acreage in oats is 1.6 per cent. less than last year. There is a decrease of 5 per cent. in New York, 2 in Indiana, 5 in Illinois, 2 in Wisconsin, 2 in Minnesota, 4 in Iowa, 7 in Missouri. On the other hand there is an increase of 3 percent in Pennsylvania, 1 in Kansas, and 5 in Nebraska. The condition of oats is 98 as compared with 93.3 on June 1, 1897, and 99.5, the average for the corresponding date for the past ten years. The principal state averages are as follows: New York, Pennsylvania, Ohio, and Illinois, 96; Michigan, 95; Indiana, 98; Wisconsin, Minnesota, and North Dakota, 100; Iowa and South Dakota, 103; Nebraska, 104; Missouri, 93; and Kansas, 94.

The acreage reported as under barley is 5.3 percent less than last year, the reductions in the principal states being as follows: New York, 10 percent; Wisconsin, 8; Minnesota, 11; Iowa, 8; North Dakota, 4; South Dakota and California each 1. The condition of barley is 78.8, as compared with 87.4 on June 1, 1897, and 89.9, the average at the corresponding date for the last ten years. The condition by states is as follows: New York, 95; Michigan, 94; Wisconsin, 100; Minnesota, 98; Iowa, 102; Nebraska, 104; South Dakota, 103; North Dakota, 100; Washington, 97; and California, 92.

The acreage under rye shows a decrease of 3.5 percent, as compared with last year, the decrease in New York being 5 percent, in Pennsylvania 2, Michigan 7, Wisconsin 1, and Kansas 1. The condition of rye is 87.1 as compared with 89.9 on June 1, 1897, and 90.6, the average for the past ten years. The averages in the principal states are as follows: New York, Michigan, Minnesota, and Iowa, each 96; New Jersey and Pennsylvania, 99; Illinois, 94; Wisconsin, 100; Kansas, 103; Nebraska, 105.

The condition of spring pastures is phenomenally high, there being but few states in the North or West where it does not approach or exceed 100.

John Hyde, Statistician.

NEWS SUMMARY.

Several prominent coal dealers in Philadelphia have been arrested for selling coal to the Spanish government.

Italian immigration to this country is proportionately large. Out of 32,938 who arrived in April last, 12,309 were from Italy, and of the 23,130 male immigrants that arrived, 9,595 were Italians. In the first 10 months of this fiscal year Italy furnished nearly as many immigrants as Ireland, England, Scotland, Germany and Poland combined.

The island of Porto Rico, which was discovered by Columbus in 1493, was named by him San Juan and was so called until the eighteenth century, when it became known as San Juan de Puerto Rico, and is now generally shortened to Porto Rico. It is pronounced Por-to-Ree-ko, and means rich port.

Cienfuegos (pronounced the en-fway-gose, with the accent on the third syllable) was named in honor of Jose Cienfuegos y Jovellanos, who was captain general of Cuba, 1816-1819. The town was founded during his rule. Its name in English means "hundred fires."

Seven cases of yellow fever have been reported from McHenry, Miss., and the town was declared under quarantine June 10. The utmost energy will be put forth to prevent its spread.

England has eleven armored cruisers, France thirteen, Russia five, Germany one, Spain one, Italy two, Japan two, the Argentine Republic two, Austria two, the United States two and Chile two. One of Chile's two is the most noted of her class. It is the Esmeralda, 7020 tons, with a six-inch belt, equipped with a battery of two rapid-firing eight-inch, sixteen six-inch, and eight three-inch guns, and a speed of twenty three knots an hour.

The annexation of Hawaii is under discussion in the House, and Wednesday, June 15, set for the vote upon it.

The wire nail trust was completed week before last with a capital of \$25,000,000. At Anderson, Ind., last Sunday, the new trust posted notices of a reduction in wages ranging from 9 to 33 percent, and including

almost all of the 800 workmen in the plant. The trust now controls fourteen of the largest plants, and employs 10,000 men. The work of organizing these men has begun for the purpose of resisting the cut. The situation is serious.

The Drovers' Journal (Chicago) says: Young veal calves, 120 to 150 lbs., are being sent to the country in large numbers. The steer calves are selected, as the breeding of the heifers from the dairy districts is generally not such as to make them desirable. Then, too, the demand is for stock to fatten and not to breed. These young steer calves have lately cost as much as \$7 to \$7.25 in Chicago, which seems a pretty high price to pay for stockers, when fine fat cattle are selling \$2 less, but their light weight makes them cost about \$8 to \$10 per head. In the early eighties Chicago handled many thousand Eastern dairy calves, which were distributed through the West as stockers, but they were generally of heavier weight than Western buyers are now taking.

On June 6 an earthquake shock was felt in portions of Kentucky.

Chicago's police force last year cost \$3,457,665. The officers made 83,680 arrests, recovered stolen property valued at \$390,628 and fines were inflicted amounting to \$216,284.

The deer forest of Kinloch, in Sutherlandshire, which comprises about 40,000 acres, has been let by the Duke of Sutherland to Arthur J. Balfour, the rent being 1,000 pounds for the season.

The Railroad Gazette says the railroad mileage of the world was 445,064 at the end of 1896, and the United States had 182,746 miles.

The monthly bulletin of the Kansas state board of agriculture, issued June 6, estimates that the wheat prospects are the most promising of any June in the history of the state, the general average condition being given at 103. The stand and growth of the plant are not only excellent, but the absence of injury by insects is equally noticeable. The condition of corn is not so favorable, being 79 for the state.

It has been unusually dry for the past week, east of the Mississippi, but west of that river it was rather wet. The corn crop is not in as promising condition, generally, as usual, but with favorable weather it has a chance of coming out.

Spring wheat is doing well. Oats are growing too fast in some locations. The prospects for the hay crop are great.

WAR NEWS.

June 7 the American fleet bombarded the Spanish fortifications defending the entrance to the harbor of Santiago, for three hours, destroying several earthworks, and two batteries. About 1,000 projectiles were fired, doing immense damage. Six men were killed and 17 wounded on board the Reina Mercedes. Three officers were killed and one officer and 17 men wounded among the troops. Sampson's object was to prepare the way for the landing of American troops. American vessels were not injured. The Reina Mercedes, a Spanish cruiser, was sunk.

The monitor Monterey, with the collier Brutus, sailed for Manila, from San Francisco, June 7.

Caimarena, in the bay of Guantanamo, 40 miles east of Santiago, was shelled by five of Sampson's war vessels, June 7, and the fortifications destroyed. The Spaniards abandoned the town.

The Philippine insurgents under Aguinaldo have been pressing the Spanish forces closely at Manila, killing many and taking a large number of prisoners. It was reported June 9 that Manila had been taken. The situation of the Spaniards is known to be desperate. A despatch from Madrid, through London, June 10, says the Spanish general at Manila will have to surrender. A cabinet council instructed one of the Spanish ministers to open negotiations looking towards peace.

Lieutenant Huntington's battalion of marines that landed from the transport Panther June 10, and encamped on a hill at the outer entrance of Guantanamo, was attacked by Spanish regulars and guerrillas Saturday afternoon, and the fight was kept up for 13 hours, when reinforcements were landed from the Marblehead. The American loss was four killed and one wounded, and our advance picket guard is unaccounted for. The killed are Assistant Surgeon John Blair Gibbs, of Richmond, Va.; Sergeant C. H. Smith, Privates Wm. Dunphy and James McCalgan.

Secretary Alger gave out a statement June 12, showing that since May 14—less than a month ago—the war department has loaded 12 solid miles of freight cars with provisions for the army. This included 19,123,900 rations, weighing 64,360,950 pounds. Some of the things purchased by the quartermaster's department are: 8,810 cavalry horses; 5,000 small mules; 1,500 small horses; 4,090 wagons, 425 ambulances, 17,052 single harnesses, 1,500 saddles and bridles, 1,497 pack saddles, 3,100 halters, 1,755 artillery horses and 455 draft horses for siege trains, 106,382 blankets, 123,128 blouses, 25,739 canvas coats and trousers, 55,580 cotton flannel drawers, 123,905 summer drawers, 121,709 campaign hats, 23,950 canvas hats, 92,884 leggings, 105,287 paunches, 130,785 flannel shirts, 192,656 leather shoes, 300,399 cotton stockings, 24,270 woolen stockings, 24,890 hammocks, 8,125 helmets, 3,820 mosquito bars, 2,000 head nets, 6,006 monsoon tents, 141,562 shelter halves, 3,562 wail tents, and 1,250 conical tents. There have been transported over railroads 126 regiments of infantry, 34 regiments and battalions of cavalry and 20 batteries of artillery. Forty-one steamers have been chartered and fitted up for the transportation of troops and supplies.

AGENTS WANTED for "Our Naval War With Spain," splendidly illustrated; only authentic book to be published; free outline now ready; act quick. National Pub. Co., Lakeside Bldg., Chicago.

Choice re selected Gold Mine. Best grown. Price \$1.00 per bushel. Bags free when full. A. H. FOSTER, Allegan, Mich.

FIELD NOTES.

Switzerland Co., Ind., June 8.—Dry weather at present and growing crops are needing rain. There is some complaint about corn not coming up very well. Wheat harvest will be here in the near future. Farmers are making good improvements in the roads by grading and draining them. This county has several miles of free pike.—Farmer.

Jefferson Co., Ind., June 9.—Clover harvest commenced this week. Barley about ready to cut. Early cherries are ripe. New peas and early potatoes are finding their way to the farmer's table. The last week has been a trying one on the tobacco farmer. The early plants are getting too large and the weather quite dry. Some have been watering and setting plants. Relief is at hand as we had a light shower yesterday and a good rain this evening, and with favorable weather tomorrow there will be acres of tobacco set and many backaches produced. This rain is a timely one as vegetation was suffering from the dry weather.

Harrison Co., O., June 8.—Warm and dry; no rain for two weeks; corn doing well except that planted when the ground was too wet; some corn being worked the second time. Oats, meadows and pastures have made a good growth. Wheat headed out and is good; some early fields turning yellow; late wheat just in bloom. Apples have dropped off until there will not be a half crop. Most other fruits abundant. Early cherries and strawberries ripe. Wool in good condition. One clip of unwashed, in Jefferson county, sold for 17 cents. There is a large crop of lambs; all stock doing well. Bees not doing as well as last season; some swarms reported; white clover not showing much. Green township pike will cost nearly double the first estimate.—E. J. Hiatt.

Hartford, Wash., June 2.—There was quite a drop in wheat quotations yesterday and new figures are announced today. Flour of all kinds has declined 25 cents per barrel. This, for the Puget Sound region, is good news, as all farmers on the coast, buy their flour, also wheat for poultry. Fresh ranch eggs are scarce; sell at retail at 20 cents per doz.; jobbing price, 17 cents. Strawberry market is overstocked, selling as low as \$1.25 per crate. Hay has dropped \$1 per ton. Hides have advanced 1-2 cent. Seattle prices for butter (jobbing) fresh ranch, 10 and 12 cents per pound; creamery 17 1/2 to 19 cents. Local markets (retail prices) 35 and 40 cents per roll of two pounds; fresh ranch butter with creamery, at 40 cents. In Tacoma wheat is down to 85 and 89 cents, with no market for it. Snow fell at Hartford 1 1/2 miles from our home, at 3 o'clock in the afternoon of June 3. At 7 in the evening there was still snow on the roofs of houses, etc. Strange to say, there was not a sign of snow or hail at our house or in our vicinity, but a very heavy rainfall. California onions are \$1.25 per 100 lbs.; California new potatoes, 2 1/4 cents per lb.; Puget Sound old potatoes, \$10 and \$12 per ton.—M. H. Monsey.

CHARLEVOIX—BAY VIEW.

VERY LOW RATES TO BOTH PLACES.

On account of the Chataqua Assembly and Camp Meeting D. G. R. & W. and C. & W. M. Ry. ticket agents will sell, from July 11th to 21st inclusive, round trip tickets to Charlevoix and Bay View, good for return until August 20th, at one way rates.

Great chance to visit Northern Michigan during the best season of the year at small expense. "Ye Inn" at Charlevoix—the beautiful, with "Beds as good as at home" and "Whitefish-a-la-Charlevoix" will be opened June 25th to September 25th.

For further information descriptive books, and sleeping or parlor car reservations, apply to any D. G. R. & W. or C. & W. M. agent, or write Geo. DeHaven, G. P. A., Grand Rapids, or Blaine Gavett, D. P. A., Detroit.

ANOTHER \$1.85 EXCURSION TO GRAND RAPIDS.

The Detroit & Milwaukee division of the Grand Trunk Railway will give another excursion to Grand Rapids on Sunday, June 19th, leaving Brush St. depot at 7 a. m., Gratiot Ave. 7:05, Milwaukee Junct. 7:20, arrive Grand Rapids at 12:00 noon, return leave Grand Rapids at 7 p. m. making a fast run home. Remember \$1.85 for the round trip.

THE FOURTH MACHINE.

The Lawrence Pub. Co., Gentlemen—I wish you would send me one of your Michigan Farmer sewing machines in oak woodwork.

This makes the fourth machine in our family.

Very truly yours,
FRED HEININGER.

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WANTED.

A thoroughly reliable, energetic woman who has had some experience in caring for the sick.

Address F. E. M. & Co. Box 107, Detroit, Mich.

FOR SALE. A fine herd of HOLSTEIN COWS and HEIFERS. Twenty five Oxford Down ewes. W. L. BRIDGE, Riverside Dairy Farm, Trenton, Mich.

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10,000 ACRES of Farming Lands for Sale, in Isabella county, Central Michigan. Long time. Easy payments. Titles perfect. Good roads; good schools and churches; near to postoffice; best market in Michigan. Prices—\$3 to \$8 per acre. Terms—\$1 per acre cash, balance in five yearly payments. Interest 6 per cent. Write to JOHN S. WEIDMAN, Weidman, Mich.

The Household.

CONDUCTED BY MRS. ELLA E. ROCKWOOD,
Flint, Mich.

For The Michigan Farmer.
JUNE ROSES.

BY DANNIE EASTERLY ZIMMERMAN.

Dear yellow roses, pure and sweet to see,
With a glint of sunshine in your hearts
for me,
Changeless little friends of my sunny
youth,
Emblems of constancy, purity and truth.

Dear red roses, you I fondly hold,
You speak to me of passion and a love
so bold,
I press you to my heart in swift embrace,
Above your ruby hearts I see my lover's
face.

Dear roses white, so full of grace and
peace,
Telling of heavenly love that ne'er will
cease,
Lessons of mercy and of charity I see,
And in your pearly hearts I read the
life beyond for me.

HOME CHATS WITH FARMERS' WIVES.

AN OPINION.

"Dear Editor: Will you give us in one of your chats your opinion on the following question: Would it be profitable for a farmer's wife, having a talent more or less latent for doing some special work, to sacrifice time or perhaps money for its cultivation? Could one make such work as nursing, sewing, writing, things we often hear women say they enjoy doing, pay well enough to enable them to have help about less pleasant tasks and at the same time enjoy the benefit of one's home and family, besides having the real pleasure of working in a congenial vocation?"

Thus reads a note which came to my desk the past week from one of our well-known and esteemed correspondents.

As you see, I am only asked to give an opinion, and this renders a reply much easier, since it will not be necessary to enter into the ethics of the question. Probably you all know in advance what that opinion is. However, it is hereby set forth in so many words.

Probably the tenor of life is more frequently altered and turned aside from its natural course by marriage than by any other thing. Early marriage, particularly, entered upon before one's tastes are really formed turns the tide of life into new channels. The half-formed plans, the ambitions which were cherished and which a few more years might have seen realized are suddenly laid aside and an entirely new and different life opens with the words which bind two souls together for all time.

It frequently happens that the ambitions, the natural tastes and talents so rudely thrust aside by the impetuous Cupid reawaken after a time and begin to assert themselves. There are vague longings and ambitions, with perhaps a sigh for the "might have been." Especially is this true when one is conscious of the possession of a talent which only needs cultivation to carry out these ambitions, while bound with cares which prevent its operation.

Then comes the thought, Why not do both? Why not be a home-maker and at the same time engage in some congenial work which will not only brighten one's life, but also furnish that great desideratum of the average woman's heart, a little extra money for her purse?

It is plainly the duty of every woman who assumes the cares of wifehood and motherhood to give first place to such duties as may be connected with her position as such. No matter how gifted she may feel herself to be in other directions her home should never be neglected. If she can give that the attention it requires I see no objection to her engaging in other work, provided the plan does not meet with serious objection from her husband. Some men are so sensitive about this. They cannot endure the thought of their wives doing work outside what they are pleased to term her "sphere." They do not want them to do anything which could reflect upon their own ability to provide for their families. If such feeling can be overcome and one has a talent for any particular line of work it opens a way of escape from less congenial tasks and at the same time affords opportunity for earning money which so many women long to do.

It sounds very easy to read, as we

frequently do, of the many ways in which a woman may earn money and at the same time attend to her home. Some of these are far easier in theory than in practice. But there are a great many women who are following different lines of work with success, and their number is constantly increasing. There are not many vocations of the kind open to farmers' wives, however. Writing may be indulged in, yet in these competitive days one needs to have something to say and know how to say it if their hopes of success are to be realized. Where there is a natural inclination for the work it may be advantageous to cultivate it, yet it is only fair to say that where one succeeds there are many who do not.

As to sewing, there are many farmers' wives who hire this done and more who would be glad to do so were there some one who could be employed to do it without going to town. I have known of several farmers' wives who have made considerable money by sewing for their neighbors, and consider this one of the surest ways of earning something where one has the time to devote to it. Any one capable of cutting and fitting, who is neat and tasteful, can get all such work they can do in almost any neighborhood, and certainly could earn sufficient to more than pay a hired girl to do the kitchen work for them.

As to nursing, where one has a faculty for taking care of the sick, is willing to endure the deprivation of regular hours for rest and is strong enough to follow it, there is an ever ready field for them also. Trained nurses demand high rates of payment and are rarely employed in the country, where the members of the family and the kindness of the neighbors are depended upon to do the work. One needs a certain degree of skill and definite fitness for the occupation; given these, employment would not be lacking at reasonable rates. It would take one away from home, there is that against it.

Some women are very successful in bee keeping, and where one is not afraid to work among bees it furnishes pleasant and lucrative employment. The profit from even a few hives of bees is considerable, since a swarm will frequently make 100 pounds of honey in a single season. The work is not hard, nor does it require very much time.

Poultry keeping is a familiar occupation to most farmers' wives, and, when rightly managed, affords considerable profit. The bulk of the egg money usually goes for groceries, however, and unless a woman is firm enough to insist on having it for her own she will find that there is an ever ready place to put the proceeds. For myself I should raise turkeys rather than depend upon any other fowls for profit, since an early-hatched Turk will usually bring one dollar when disposed of in the fall, and with good luck at hatching time one can easily raise from 75 to 100 each year.

To summarize, I think a woman may engage in outside work which does not conflict with her home duties. I think she is justified in doing something which she enjoys doing best and thus provide help with the housework if she prefers to do so.

There are plenty of women who are doing this to-day, and women in business, either by themselves or in connection with their husbands, are now so common as to excite no comment. Neither does this in any way reflect upon those who are looked upon as being natural providers for the family. Not all men can be financially independent, either by inheritance or by their own business acumen, hence, since it is the true helpmate who helps where her services are most needed she will add dollars to the family fund whenever she can.

STRAWBERRY CAKE.

Stir together one cupful of granulated sugar and half a cupful of butter. Beat the yolks of two eggs very light and stir them with the creamed butter and sugar; then add three-quarters of a cup of rich, sweet milk, two heaping cupfuls of sifted flour and two teaspoonfuls of baking powder; stir the flour and baking powder by degrees into the mixture and beat it hard. Pour this into a large square pan and bake about 20 minutes in a well-heated oven. While the cake is baking, beat the white of the two eggs to a stiff froth with quarter of a pound of pulverized sugar and get ready some very sweet strawberries. Slightly crush one pint

and when the cake is baking let it cool and then cut it into a dozen squares. On one side of each square spread a little of the frosting and then on six of the frosted pieces put the crushed berries and cover them with the other six pieces, putting the frosted sides to the berries. With the remainder of the frosting cover one side of each of the six pieces. Cut some of the strawberries in two and put them—the cut side down—in the frosting on the top of the upper squares. Put the squares on a broad, flat dish.

Strawberry Jam.—Having stemmed some very ripe strawberries, weigh them, and to each pound of the berries allow one pound of granulated sugar. Sift the sugar over them and let stand until the sugar is all dissolved, then put them into a porcelain kettle and boil and skim it until the scum ceases to rise. Keep them over a moderate fire and cook slowly until they are a smooth, thick mass. Seal air tight in pint jars.

Strawberry Jelly.—Select very ripe strawberries, hull them and put them into a stone jar; cover closely and set it in a kettle of boiling water. As soon as the berries are mashed, take them out and strain them through a linen cloth. To each pint of the juice allow a pound and two ounces of the best loaf sugar. Stir up the sugar while it is dissolving, and when all is melted, put it over a brisk fire and boil it steadily for 25 minutes, keeping it well skimmed. Put it warm into tumblers, and when it is quite cold cover it with double white tissue paper. Over the top tie a thick paper.

Strawberries and Rice.—One quart of sweet milk, two-thirds of a cup of uncooked rice and a pinch of salt. Put into cups, set in a steamer over boiling water and cook until the rice is almost jelly. When cold turn it out of the cups into saucers and pour round it a sauce made of mashed strawberries and whipped cream, well sweetened.

Strawberry Snow.—Beat the whites of five eggs to a stiff froth and add gradually 10 tablespoonfuls of pulverized sugar. Beat hard for half an hour, then beat in one teaspoonful of mashed strawberries. Set on ice until very cold. Serve with rich, sweet cream, sweetened.

Strawberry Sherbet.—One quart of very ripe, sweet strawberries, mashed. Sprinkle over these one pint of powdered white sugar; add the juice of one large lemon and half a pint of cold water in which has been dissolved one tablespoonful of gelatine. Freeze as you would ice cream.

ILKA.

A MOTHER'S WORRISOME STUMBLING BLOCKS.

In many respects a farm is the best possible place for young children to live, play and grow in. And how they do love the range of field and wood; the companionship of Nature; the kingdom of bird and beast and the freedom from conventionalities of dress and society! Later on they may go out into the world to fill its highest office or shine as a social light, but memory always casts a halo about every nook and corner of the dear old place, and when the worn nerves demand rest from the feverish rush of life they involuntarily turn to nature and seek the sights, sounds and odors with which she is ready to heal the mental or physical pain of her truant lovers.

Yet a mother living on a farm finds many an obstacle to the training of her children in those manners which good society calls for and which seem to come easily to city children. One of them is the presence of hired help. How can she, without giving offense or pain, reprove a child for something the men are also doing? How can she correct his speech when it is a perfect copy of what is heard every day from some one in the house? All who have ever tried it know that a great tableful of ravenous harvest hands, threshers or potato diggers is not favorable to the use of some articles whose refining influence is only to be obtained by daily contact. For instance, the

napkin. The mother cannot reprove a child for wiping its mouth upon the hand, sleeve or apron unless the proper article is provided. It may be that she would be glad to accept the extra work made by the daily use of napkins, but knows that half the members of her board will look on one with scorn yet quickly resent the slight if none is placed at their plates, while a few scoffs from them will go a long ways with the children. The same trouble lies with other table manners. It seems strange, not at all complimentary to the mother perhaps, that she so often finds her influence regarding these amenities of so much less weight with her children than that of their teacher. One who had tried to get her children into the habit of asking to be excused when leaving the table, was, for some time pained to see them either forget or ignore her wishes. Then she was surprised to find them taking up the little ceremony with considerable gusto. By and by she found that their teacher had been talking about it and the small boy confessed that he did it so that when she inquired how many of her pupils had practiced it, he might truthfully claim the honor.

Then, the matter of dress. Lord Chesterfield declared that no gentleman could make a polite bow with a hole in the heel of his stocking. If this be true, how can we expect a boy to touch his cap with grace when that piece of headgear is the tattered veteran of many a battle with bumblebees or hornets; the pants held by one suspender with string supplement, have a loose patch fluttering in the rear, while his sturdy limbs are either scratched or muddy? This is not always the case with a boy's summer costume, but if he has a real good time it is apt to be the case pretty often. The refining influence of nice clothes is undoubted, but I fail to see how it is to be secured by children at play or people at work on a farm. There is no distinct line between hours of work and those of leisure. The chores break in everywhere, while country work and country pleasure are alike ruinous to any dainty clothing.

On a farm children secure habits of industry which are invaluable, no matter what other pursuit they may choose. They see less of the wickedness and wretchedness of life than children in town; but the same natural tendency to evil is everywhere, and one of the most discouraging facts ever met by woman, wife or mother is that a little evil influence goes so much farther and has so much more power than a great deal of what is at least meant for good. How easily a child is "set up" by some one, perhaps the very man who should be most anxious to shield it, to something it takes many tears and prayers from the mother to undo. No wonder that she so often faints and falls over the stumbling blocks.

Oregon City.

A. H. J.

SUMMER WRAPS.

A few summer wraps have made their appearance, and they are very pretty. A small shoulder cape made of very fine black cashmere, without lining, is trimmed with black satin ribbon and lace. A hem around the bottom is half an inch deep, and on the hem is a ruffle of black lace two and one-half inches deep. Allow half a yard for fullness. The satin ribbon is three-quarters of an inch wide and is in rows around the cape, from the neck to the edge. The first row is put on at the upper edge of the lace ruffle; the next row is one and a quarter inches above the first, and so on until the neck is reached. The ribbon is sewed on the upper edge only. The neck is finished with a ruffle of black lace, gathered quite full, and tied with a satin ribbon two and a half inches wide, with long ends, taking two yards of this ribbon.

A handsome cape for a young lady is made of rather thin black silk, lined with light blue lining silk. It is plain around the edge. Commencing at the very edge is a row of light blue

ENAMELINE

THE MODERN

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Quick Shine
Little Labor
No Dust
No Odor



NO OTHER COMPARES WITH IT. IT'S THE BEST.

satin ribbon, half an inch wide; one inch above this is another row, and so on until the cape is covered to the neck. The ribbon is sewed on one edge only, and is put on before the cape is lined. The ribbon and lining are the same shade. The neck has a double box plaiting two-and-a-half-inch-wide, blue satin ribbon, tied with the same and having long ends.

A lovely wrap is made of heavy black silk, lined with pink silk. The wrap is shaped as a cape, and has two long tabs in the front. The back or cape part reaches to the hips; the tabs are seven inches wide and in length reach almost to the knees. Around the edge of the cape and tabs, and down the left side of the front, is a scant frill of black lace two and a half inches wide. The entire wrap is covered with a vine of jet beads. The neck is finished with a double frill of the lace, and closed all the way down to the bottom of the tabs, with hooks and eyes, bringing the side with the lace over.

Another handsome wrap, made same style, but having short tabs, is made of heavy black net, black lace and black satin ribbon. Around the edge of the entire garment is a scant ruffle of black lace, two inches wide. Just at the top of this is a row of three-quarter-inch-wide, black satin ribbon. Another ruffle of the lace, then the ribbon, and so on, alternating the lace and ribbon until it reaches the neck. The tabs are done same way across the ends. The lace is put on the left side down the front. The neck is finished with a ruffle of the lace and tied with a bow of black satin ribbon one and a half inches wide. The wrap is closed down the front with hooks and eyes. This wrap is not lined.

A small shoulder cape of navy blue silk, no lining, has two ruffles of two-inch-wide black lace. One ruffle is at the edge, and goes around both sides at the point. The second ruffle is an inch above the first, and goes across the cape only. At the neck is a box plaiting of the same silk as the cape, and tied with two-inch-wide blue ribbon, same shade as the silk.

A very pretty hat for a young girl is a white sailor. Around the crown is a band of light brown ribbon two inches wide; over this is a very dark brown ribbon one inch wide. The two shades are made into a small bow at the left side, and in this bow are two small wings, one white, the other brown.

The prettiest hats for young girls are white sailor, trimmed with white lace, small, fine flowers, and light shades in ribbon. For young girls, hats should not be too heavily trimmed; much trimming is too old for them.

CLARA.

THE COUNTRY HOME.

(Read April 6th, before the Sand Beach Farmers' Club, by Mrs. B. F. Browne, and published by request of club.)

As has been said: "Between the home that was set up in the Garden of Eden and the home before us in eternity, stand the homes of earth, in long succession." It is therefore important that our homes should be brought up to a standard in harmony with their origin and destiny.

Here all improvements and reforms must rise. A home where an outlay of care, a little labor and forethought has created beauty, in the shape of a thrifty appearing country place, smooth, hard walks, neat sodding near the house, a flower garden, shade trees, rows of fruit trees, grapes, vines of some kind (we need not resort to costly climbers; woodbine, wild cucumber, or clematis may be had for the gathering). These things, created in summer evenings after working hours, in leisure time in winter, in early mornings, noon rests, or on holidays, lend an air of refinement to the whole establishment, giving it a higher market value, and would secure a purchaser much more quickly if it were for sale.

We take the color of our surroundings and are happier, more amiable, when these surroundings are pleasing and in good taste, and the expense is so little in comparison with the profit. A growing family will be much more likely to remain cheerfully in a truly beautiful home; even if that beauty is extremely simple and inexpensive. Sons and daughters do not waste their money at home.

So much complaint is made that farmers' sons and daughters do not want to stay at home; they hate the farm; want other business. The girls had rather be store clerks than to be at home helping their mothers, making

butter and raising fruits and vegetables; the sons want to try their fortunes in the city. How true is the following: The parents find themselves, when their children are old enough to be efficient help, left to hired servants, who have little care to aid them in making and saving money, who are no company indoors, and, meanwhile, the parental heart is burdened with fears and anxieties for the absent children, and possibly the parental purse is burdened with their business failures. When every acre of land in our farming districts is made to produce to its fullest capacity, and not left lying in marsh or barren for years, then we shall be a solidly wealthy people. If the population which is now swarming in our cities and towns, fretting in poverty and idleness, would pour out as workers into the country, filling it so that swamps must be drained, dry wastes irrigated, hills terraced for grapes, and the woods cleared of underbrush and set to growing large timber, then we should find a reign of plenty, and all our present beggars might be on horseback—at least while they were tilling the fields and driving the market wagons.

According to one writer, the reason of that restless haste to leave the farm is owing to a neglect of making the farm and farm-house attractive. So many of these homesteads have a lonely, desolate look. The yard which surrounds the house is often cut and trodden up by the farmers' cattle and horses, and whatever of vines and flowers the tidy wife may have planted, ruthlessly torn up by the depredations of the swine. How can we associate that person with the thrifty and home-loving ones? Things get a sameness and shabbiness and young eyes pine for something more attractive. What a stay to a child through all his life is the memory of a home of order, neatness and sunshine?

Now, into this beautiful and well-surrounded home we must invite order, for where order is lacking comfort and beauty and their attendant train, and often love also, will fly out of the window. Order will secure the saving of time, the saving of strength, prevent the rapid wasting or wearing-out of the house or furnishings, and preserve a healthful atmosphere, inspiring to the family, and inviting to guests.

And now we must invoke economy to preside in our homes. It is said: "Where one man sins in penuriousness, ten sin in extravagance." Guarding against meanness, we must unite liberality with a wise economy. Let us invite into our household industry, for, accustomed to industry, little time is left for contention, vice, or for destruction. Wealth may fly; indeed, it seems to grow wings with wonderful facility, but industry is a perpetual inheritance.

Let us secure the gracious presence of beauty. Truly, God is a kindly lover of beauty, who could not let even a beetle go from his creating hand without polishing and spotting its wings. I do not mean that beauty which is created by money, in velvet, Brussels, rosewood furniture, fine ornaments, and pictures. These things are all very well when they fall to our lot, but the beauty which I mean can be created anywhere, and out of almost anything, by simple good taste.

What a comfort to the parents when the sons prefer to remain on the farm with their father! What anxieties they have all been spared; what temptations, what losses!

"Oh, the peace and joy of that dear old home, where brothers, sons and husbands, tired, with willing footsteps come, a place of rest, where love abounds—a perfect kingdom—home!"

La Belle writes: I am a farmer's daughter but on the farm only about two months out of the year. School duties occupy the most of my time, but this spring my mother being in poor health I have been at home helping with the work. On taking up our carpets we noticed where some small pest had bored through the floor from the ground and done much damage to the carpet by eating small holes in it. Has any of the readers noticed such a pest in their carpets?

I would like to ask information from some poultry raisers in regard to feeding young chickens before they are old enough to eat grain. Some have told me not to feed too much wet feed. Now I am feeding baked meal.

(La Belle can feed her chicks meal slightly moistened with milk or water without injury. It is in very wet or sloppy food that danger lies. Bran mixed with the corn meal makes an excellent food for young chicks.—Ed.)

Miscellaneous.

THE LOVER'S QUEST.

BY EARNEST GLANVILLE.

Author of "The Lost Heiress," "The Fossicker," "A Fair Colonist," "The Golden Rock," etc.

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(CONTINUED.)

CHAPTER VI.

A tremendous uproar broke out, the whole band charging Miles with having deliberately knocked the rifle up to spoil his rival's last chance of success. The excitement under which they labored turned to fury, and they began to hustle him with loud cries or insult, while some snapped their fingers in his face and dared him to strike.

Miles shifted his grasp to the barrels of his heavy Express, but he kept his wits in the angry whirl, for he knew that if he struck one blow he would be instantly cut to pieces; as he was pushed back his gaze fell on the sheikh, who was standing apart, looking at the scene with apparent indifference, and he read in the man's bearing that there was little hope for him unless he could force the position. He thrust the butt of the gun into the body of a man who was pressing upon him and getting round, delivered a swinging blow at the bare shins of the other tormentors, then, in the confusion, dashed at Abdol, snatched the bandoliers from him, and quickly thrust home a couple of cartridges.

"What is it," he cried, "peace or war?" and he leveled the gun at the sheikh.

The Arab leader folded his arms and tried to call up an expression of surprise, belied by the twitching of his thin nostrils.

"By Allah," he said, quietly, "you have a rough way with you, my friend."

"Tell your men to retire," said Miles, firmly, as a glance out of the tail of his eye showed a stealthy movement of white figures to his rear.

"Not while you threaten me," said the chief, coldly.

Miles lowered the barrels. "You saw these men threaten me, and you said no word."

"Nay, it was but their way, and you gave them cause. The wager hung on the last shot, and you struck the man's gun aside in the sight of all. It cannot surprise you that they were resentful."

"I struck the gun aside because it was pointed not at the mark, but at the man."

"Say you so," said the chief, with a sudden blaze. "Abdullah!" The man advanced.

"Hear this charge against you that you were aiming at the slave?"

"It is a lie," said Abdullah, with a scowl at Miles, while the others freely cursed the white son of sheitan.

"He denies it," said the chief, looking at Miles, "and as he held the weapon he must know best."

"I stood behind him, and am certain he aimed at the man. Ask the Hottentot?"

"Bring the slave hither, and, by the prophet, we will get at the truth of this."

The court opened at once, and a shout was raised, for the Hottentot had bolted and was even then disappearing into a mass of boulders at the foot of the cliff opposite. A dozen men started in pursuit, while many broke into a shout of laughter, and the chief, changing his mood on a sudden, placed a hand on Miles' shoulder.

"You have lost the wager, my friend, and I am afraid I have lost my slave, for he is like the cone when among these rocks. Yet you shoot well, and you are quick to act and bold, too. I will swear you have taken the field as a soldier."

"I have been under fire," said Miles, still on his guard.

"I know it, else I would not have troubled to cripple that red-pated devil when he sought your life. And this is the word I have long meant to say to you—a hundred rifles and two hundred swords I will give you to command if you stand by me."

Miles looked at the chief in astonishment.

"You are trifling with me," he said. "I do not trifle on these matters," said the Arab, grimly. "Think over what I have said and let me know tomorrow, and let your thoughts dwell on this that if you are captain these men, instead of being ready to pick a quarrel, would be as a shield against danger."

"Are you offering me service in the pay of a slave trader?" asked Miles, quietly.

"I am Was-el-Rewa," said the Arab, with a proud gesture. "My command is from the White Nile to the Zambesi, and there is not a tribe between, aye, not one, that does not pay tribute to me. I have in the leash of my making 20,000 spearmen of the tribes, as much under the grasp of my hand as though I held them like a brace of hounds; and, besides them, many riflemen in thousands, waiting for the movement, waiting for the word that will set them sweeping to the sea, driving before them like foam the accursed strangers."

The Arab chief lifted his head, his eyes flashed, his hand unconsciously sought the hilt of his straight sword, and from his poise it seemed that even then he foresaw the moment when he would launch his vengeful host against the hereditary enemies of his race. Miles saw himself on the brink of some terrible revelation, and almost held his breath as he watched the emotion work in the dark and martial face of the chief. As he looked, the black eyes met his in a glance that seemed to pierce him through.

"Behold," said the Arab, solemnly, "I have said more than is safe for you to know. I will give you till tomorrow for your answer."

"I will give it you now," said Miles.

The chief raised his hand. "It is only a fool who rushes on his fate. Peace, friend, and reflect. Well," turning to the men who had returned from pursuit of the Hottentot, "where is his slave?"

"The dog hath crawled into a hole, my lord," said one, "and the longest spear cannot reach him, neither can any one of us crawl in for the narrowness of it."

"Let him be till the morning, and we will see whether Nimr cannot fetch him out," Then, turning again to Miles, he said in English. "On your answer to-morrow depends the life of that slave, who has found shelter where none but a black leopard can reach him. Till then you are captain of mine, and may keep your gun. But go not away from your hut."

With this parting word, accompanied by a meaning glance, the leader strode away without a look at his men, who took their cue from his mood, and went their way in silence, leaving Miles standing alone.

(Continued on page

AN OPERATION AVOIDED.

Mrs. Rosa Gaum Writes to Mrs. Pinkham About it. She Says:

DEAR MRS. PINKHAM:—I take pleasure in writing you a few lines to inform you of the good your Vegetable Compound has done me. I cannot thank you enough for what your medicine has done for me; it has, indeed, helped me wonderfully.

For years I was troubled with an ovarian tumor, each year growing worse, until at last I was compelled to consult with a physician.

He said nothing could be done for me but to go under an operation.

In speaking with a friend of mine about it, she recommended Lydia E. Pinkham's Vegetable Compound, saying she knew it would cure me. I then sent for your medicine, and after taking three bottles of it, the tumor disappeared. Oh! you do not know how much good your medicine has done me. I shall recommend it to all suffering women.—MRS. ROSA GAUM, 720 Wall St., Los Angeles, Cal.

The great and unvarying success of Lydia E. Pinkham's Vegetable Compound in relieving every derangement of the female organs, demonstrates it to be the modern safeguard of woman's happiness and bodily strength. More than a million women have been benefited by it.

Every woman who needs advice about her health is invited to write to Mrs. Pinkham, at Lynn, Mass.

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The silence of the men, the studied way in which they ignored him, after their recent outburst, were as ominous of impending danger as the scarcely-veiled menace of the chief, and Miles went slowly back to his hut. Once inside he counted the cartridges in the bandolier. There were eight, and each one was but a shell! As he had fired each cartridge those ejected had been carefully replaced, possibly for future loading. He quietly opened the breach of his rifle, and a glance sufficed to show that these, too, were empty. He let the useless weapon slide from his grasp with a frown. If the worst came he could not even sell his life dearly, and he ground his teeth at the thought that he had been so cleverly taken in by the cool demeanor of the Arab whom he had threatened to shoot.

The discovery of his helplessness, just when he had felt a glow of confidence in the possession of his rifle, depressed him more than anything else, and in vain he tried to fix his mind on some plan of escape. His eyes always came back to the empty cartridges, which seemed to mock him, until he kicked the bandolier out of the door, and then the rich barrels caught his restless glance, and he would pick up the gun to study the intricate damascene work, only to throw the rifle aside each time.

And now a comely slave girl brought him down a bunch of dates, and the inevitable dish of rice and chopped meat. He motioned her savagely to set them down, and she went off with a toss of the head which her ornaments rattling, and a snap of the lithe fingers in contempt, but when she reappeared with a brass kettle of coffee, and a chibouk, she found, to her surprise, that the white man was in the best of tempers.

In the interval, Miles had recovered his nerve and his wits. If he meant to escape, it must be that very night, and his first step was to throw his enemies off their guard. The girl, he knew, would chat—after her kind—over his bearing, and he determined to let her go back next time with the impression that he was in good spirits. So he greeted her with a smile as she came in, and pointed to the empty dish to show how well he had dined, and when she would withdraw, he made her sit down, and searched out from his bag a handsome glass, which he presented her. Then, as she grinned at her reflection, and glanced at him with her large eyes, and laughed in great delight, he took a pull at the amber mouth-piece of the pipe and passed it to her, and they did not hesitate to puff and puff about. Then, to do the thing thoroughly, he took a heavy gold ring from his pocket, and after slipping it on her finger, withdrew it, and using the Arab word for "to-morrow," indicated that if she came back then and waited on him the ring might be hers. She clapped her hands and set about preparing a couch with the intention of there and then winning the prize.

Miles, however, good-humoredly turned her out, and stood at the door watching her progress, which was very slow, owing to the constant halts to gaze at herself in the mirror. At last, after many a wriggle, expressive of intense joy, she reached her friends, where her lively gestures and loud laughter showed that she had plunged into her story, which would certainly lose nothing in the telling. That afternoon Miles had to hold a reception.

The faithful girl brought down relays of her friends to see the ring, his watch and chain, his brushes, and everything that was his, and, of course hers, and she finished off the long reception by introducing the chief's own favorite dancing girl, to whom Miles was especially attentive, making her happy and voluble with a cunning bracelet he had purchased at Aden from a Persian. His delighted bond-maiden patted him on the cheek as she at last reluctantly left, after the evening meal, and Miles, almost overwhelmed by the heavy odor of scents that filled his hut, sat outside, waiting for the blackness of night. He was first anxious to find if any watch was set on him, but the Arabs seated at the foot of a cliff appeared totally indifferent, and it was not until dark that he noticed ten armed men set out to the narrow entrance, from which presently came four men who had been relieved. It was evident that the guard at the passage had been increased, but there was no other sign of a watch set, and when darkness blotted all out except the fires, he was satisfied that he was to be left alone. So much for the success of his ruse in making the girl chat of her conquest. The next step would be more difficult. That

was, if possible, to gain admission to the cave where the ammunition was stored.

As he was debating this in his mind he heard a slight movement by his side, and as he turned, with a start, he saw a dark form on the ground.

"Be still, baas; it is Hans."

Miles had forgotten all about the Hottentot, but now he remembered the fate that had been reserved for the little man, and he grasped him firmly by the arm lest he should attempt to run off again.

"Why did you run away, Hans?"

"My Gott, baas, the laster bullet was for me. That why I run; and the duivels came after me, baas?"

"Well?"

"We must go this night. Right now—now. One man said the tiger would be loose to-morrow, and he would creep in the hole in the rocks after the Hottentot. Come, my master."

"Wait a while, Hans. Before we go we must have a plan, and we must also have cartridges. Do you know where the guns are stored?"

"In the cave, sieur, up the krantz."

"Can we reach it?"

"How, sieur! It is a hard thing you ask, for these men look better after their guns than their girls. But a rifle, ja mynheer, it was good to hold one if dat tiger comes after."

"We must try." Miles took off the Arab robe which he still wore, and tossed it on the ground, and drew a pair of thick socks over his red Arab slippers. The Hottentot led the way, moving with his bare feet without a sound, and Miles silently followed, until they reached a large detached boulder, when they paused to reconnoiter. There were fires blazing at the entrance to two of the larger caves, and the men and women round the nearer fire appeared to be absorbed in listening to one of their number, who was probably relating some wonderful tale of love. The firearms were stored in a cave a little above this interested circle, and beyond the reflection of the fire. At a whispered order from Miles, the Hottentot resumed his progress, however, more to the left, and after a most cautious advance they reached the base of the cliff. Halting for a moment, they saw between them and the fire the form of a sentinel, with his face turned to the group, as if he also were under the spell of the storyteller's enchantment.

The Hottentot slipped along, with his hand to the wall, running his fingers lightly over the rock, until his touch, gliding over a polished stone, warned him that he had reached the narrow track leading up to the magazine. He caught Miles by the hand, and guided his fingers over a smooth knob, which was the first step. They were now not more than a half dozen paces from the guard, and the slightest noise would be fatal. Hans, however, had no nerves in this sort of work, and while Miles was steady himself, the little man had begun the ascent, making a slight sound as he drew himself up.

Miles pressed himself into the wall, but the sentinel still leaned unmoved upon his gun, the light coming and going upon his white burnous. Miles waited a minute, then cautiously felt for a hold and drew himself up to the first step, but the buttons of his coat scraped against the stone, and as he pressed, scarcely breathing, with his face against the cold cliff side, he heard the sentry turn, take a step or two, and stand again. A glance over his shoulder showed that the guard had again turned his face to the group. He turned to his task again, and after half a dozen upward steps, taken with the utmost care, found himself on a broad ledge, with the Hottentot, who at once guided him forward through a main entrance into pitch darkness. Here he struck a light, and the tiny flame, sheltered under the flap of his coat, was reflected on rows and rows of shining rifles, stacked against the walls, and upon scores of knives and swords in their sheaths. Hans immediately grasped a curved blade, whose glittering hilt caught his eye.

Another match revealed on the other side a pile of boxes, and what was most important, a package, which Miles recognized as his own property, with the cover open, and an empty bandolier by its side. This bandolier, together with the other which he had buckled round his waist, he now quickly filled, and then stepped out to the ridge. Hans descended first, with his weapon swung over his shoulder so that it should not strike against the rock, and then Miles followed to find, when he left the broad foothold of the ridge for the smooth and steep descent, that it was one thing to find his way up, and quite another to get down

in the dark. Three times he reached down to find a foothold without success, but with more scraping than was safe, and with a growing irritation remained faithfully at the bottom, ascended to find out the cause of the delay, and promptly taking hold of his master's foot, guided it to the first step. Thence to the bottom of the track was almost straight, but the constant efforts he had made had twisted one of the bandoliers, and a cartridge dropping out, struck the rock with a sharp metallic sound.

(To be Continued.)

The Markets.

WHEAT.

After an astonishing drop in values as the result of the downfall of the Leiter deal, the great crop prospects, and the unexpectedly large shipments from the northwest, as well as from Russia, India and Argentina, the market has at length reached a point where it shows some firmness. The large amount of wheat held by Mr. Leiter is said to have been placed in strong hands, and will not be sacrificed, or thrown upon the market to depress it. The holders hope to get rid of it before the new crop becomes available. The feeling is much stronger both at home and abroad.

The following table exhibits the daily closing sales of spot wheat in this market from June 1 to June 15 inclusive.

	No. 1	No. 2	No. 3
	White.	Red.	Red.
June 1.....	100	108	100
" 2.....	100	108 1/2	98
" 3.....	102	106	100
" 4.....	108	112	106
" 5.....	102	105	102
" 6.....	100	104	100
" 7.....	101	104	101
" 8.....	100	104	100
" 9.....	103	106	101
" 10.....	92	95	92
" 11.....	92	95	92
" 12.....	91	95	91
" 13.....	93	95	92
" 14.....	93	95	92
" 15.....	93	95	92

The following is the record of the closing prices on the various deals in futures each day during the week.

	June.	July.	Aug.
Friday.....	104	85 1/2	77
Saturday.....	93	78 1/2	73 1/2
Monday.....	93	98 1/2	73 1/2
Tuesday.....	94	77 1/2	75 1/2
Wednesday.....	94	79	75

The visible supply of wheat in the United States and Canada on Saturday last was 19,682,000 bu., as compared with 22,537,000 bu., the previous week, and 22,686,000 bu. at the corresponding date in 1897. The decrease for the week was 2,905,000 bu.

The U. S. crop report says that prospects are unusually good.

The wheat crop in this State has been in need of rain, and it got more than required within the past week. In fact some injury has been sustained from fields becoming overflooded, and also from heavy hail storms in some localities. In spite of this, however, Michigan will have a big wheat crop—several millions more than last year.

The Leiter deals have all been closed, and the only ones who have fared badly was Mr. Leiter himself and foreign buyers and consumers who had to pay more for their grain than they have been accustomed to for several years. The men who made the most money were the wheat growers.

The receipts of wheat now coming into Minneapolis are getting to be very small, but in spite of that the demand for the little arriving is not good. The reason for the small inquiry is that prices are so high that flour cannot be manufactured from the grain at present prices and the flour resold at figures that will bring the millers out even.

The Oklahoma weekly crop bulletin says: Wheat is rapidly maturing. The first harvesting of May wheat was done on the 4th. With favorable weather the cutting of early wheat will be general the latter part of this week. Rust is reported in many counties, and it is feared that considerable damage may be done to the late portion of the crop.

The ruling features of the market from this time forward will be crop news, and the general demand.

A telegram from St. Petersburg, dated June 14, says the Russian winter wheat crops are satisfactory in all except two provinces.

DETROIT PRODUCE MARKET

Detroit, June 15, 1898.

FLOUR—Quotations on jobbers' lots in barrels are as follows:

Straights.....	\$5.00
Clear.....	4.75
Patent Michigan.....	5.50
Low Grade.....	4.00
Rye.....	4.00

CORN.—The visible supply of this grain on Saturday last in the United States and Canada was 21,445,000 bu., as compared with 21,150,000 bu. the previous week, and 16,621,000 bu. at the corresponding date in 1897. Quotations in this market are as follows: No. 2 35c.; No. 3 34 1/2c.; No. 2 yellow, 35 1/2c.; No. 3 yellow, 35c. per bu. The market is steadier.

OATS.—The visible supply of this grain in the United States and Canada on Saturday last was 7,113,000 bu. as compared with 7,869,000 bu. the previous week, and 9,756,000 bu. at the corresponding date in 1897. Quotations are as follows: No. 2 white, 29 1/2c.; No. 3 white, 29c. per bu. In futures No. 2 white for August is selling at 24c. per bu.

RYE.—The visible supply of this grain in the United States and Canada on Saturday last was 1,178,000 bu., as compared with 1,283,000 bu. the previous week, and 2,361,000 bu. at the corresponding date in 1897.

Market quiet and steady at 45c. per bu. for No. 2.

FEED.—Jobbing quotations on carload lots are as follows: Bran and coarse middlings, \$14; fine middlings, \$15; cracked corn \$15; coarse cornmeal, \$15; corn and oat crop \$15 per ton.

BEANS.—July delivery quoted at \$1.0 per bu. and June \$1 per bu., with a quiet market.

LIVE POULTRY.—Broilers, 18c. per lb. fowls, 6 1/2 to 7c.; ducks, 6 to 7c.; spring ducks, 16c.; turkeys, 10 to 11c. per lb.

EGGS.—Fresh receipts quoted at 9 to 10 1/2c. per dozen.

DRIED FRUIT.—Quoted as follows: Evaporated apples, 8 1/2 to 9c.; evaporated peaches, 10 to 12c.; dried apples, 4 1/2 to 5c. apricots, 7 1/2 to 12c. per lb.

BALED HAY.—Best timothy is quoted at \$9.50 per ton.

APPLES.—Selling at \$3.00 to 3.50 per bbl. for fair to good, and \$3.75 to \$4 for fancy.

MAPLE SUGAR.—Pure quoted at 10 to 11c. per lb.; mixed 8 to 9c. per lb.

HONEY.—Quoted at 9 to 11c. per lb. for ordinary to best.

TALLOW.—Quoted at 3 1/2 to 3 3/4c. per lb.

RASPBERRIES.—Black quoted at \$3 per bu.; red at \$5 per bu. Few on sale.

STRAWBERRIES.—Quoted at \$1.25 to \$1.50 per bushel cases.

CABBAGES.—New quoted at \$3 per 2-bbl. crate.

POTATOES.—Michigan stock quoted at 50c. per bu.; new southern, \$1.10 per bu.

HARDWARE.—Quotations are as follows: Wire nails, \$1.65; steel cut nails, \$1.60 per cwt new card; axes, single bit, bronze, \$5; double bit, bronze \$8.50; single bit, solid steel, \$8; double bit, solid steel, \$9.50 per doz.; bar iron, \$1.49; carriage bolts, 75 per cent off list; tire bolts, 70 and 10 percent off list; painted barbed wire, \$1.70, galvanized do., \$2 per cwt., single and double strength glass, 80 and 20 per cent off new list; No. 1 annealed wire, \$1.50 rates.

HIDES.—Market firm, with calf skins higher. Quotations are as follows: No. 1 green, 7 1/2c.; No. 2 green, 6 1/2c.; No. 1 cured 9c.; No. 2 cured, 8c.; No. 1 green, calf, 10c.; No. 2 green calf, 8 1/2c.; No. 1 kip, 7 1/2c.; No. 2 kip, 8c.; sheepskins, as to wool, 90c. to \$1.25, shearings, 12 to 20c.

PROVISIONS.—Barreled pork is lower, and the market generally weak. Quotations are as follows: Mess pork, \$11 per bbl., short cut mess, \$12; extra, clear, \$12; compound lard 5 1/2c.; family lard, 6 1/2c.; kettle lard 7 1/2c.; smoked hams, 8 1/2 to 8 3/4c.; bacon, 8 1/2 to 8 3/4c.; shoulders, 6c.; picnic hams, 6 1/2c.

COFFEE.—Roasted Rio, ordinary, 9c., fair 11c., Santos, good 14c., choice 18c.; Maracaibo, 20 to 25c.; Java, 26 to 30c.; Mocha, 28 to 32c.; package coffee sold on the equality plan on a basis of \$9.50 to \$10.50, less 75c. per 100-lb. case in New York.

OILS.—Linseed oil and gasoline are higher, while turpentine is lower. Quotations are as follows: Raw linseed, 46c. boiled linseed, 48c. per gal. less 1c. for cash in ten days; extra lard oil, 52c.; No. 1 lard oil, 45c.; water white kerosene 8 1/2c.; fancy grade, 11 1/2c.; deodorized stove gasoline, 8 1/2c.; turpentine, 33 1/2c. per gal in bbl. lots.

OUR BUFFALO LETTER.

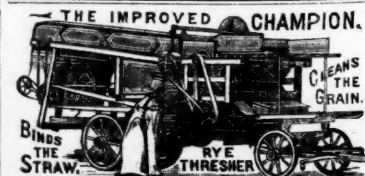
East Buffalo, N. Y., June 13.

There were only a couple of loads of cattle on sale for the week after Monday, and with a light demand the market ruled steady.

Calves were in fair demand and steady on the basis of \$6 to \$6.50. Sheep and lambs were in light supply, fair demand and generally firm and higher. The hog trade was very erratic and of wide range of values. It has been extremely difficult for both buyers and sellers to follow the course of the market lately. The market opened with a total of 115 loads of cattle on sale, 65 loads of which were stockers and 20 loads of fresh cows and springers. There were practically only about 30 loads of desirable butcher cattle on sale, and with a good demand prices were firm and 15 to 25 cents higher. Stockers were mostly thin, and being in comparatively light supply, were lower by 15c. or some grades and 10c. on others. Calves were in very large supply, about 900 head, fair demand and a quarter lower.

Good to best smooth fat export steers, weighing from 1400 to 1500 lbs. and upwards, and of desirable quality, \$5.15 to \$5.35; good to best, 1300 to 1400 lbs. do., \$4.75 to \$5.00; good to best, 1100 to 1200-lb. butcher steers, \$5.15 to \$5.35; good to best, 900 to 1000-lb. butcher steers, \$4.75 to \$5.05; common to good butcher bulls, \$3.35 to \$4.10; common to good bologna bulls, \$3.25 to \$4.10; good to best feeder bulls, \$3.10 to \$3.90; good to best 700 to 800-lb. stock steers, \$4.15 to \$4.65; good to best 600 to 700-lb. stock steers, \$4.20 to \$4.35; heifers, good to best, \$4.20 to \$4.65; fair to good do., \$3.75 to \$4.35; common, \$3.30 to \$3.65; fat cows, good to best, \$3.75 to \$4.10; common to good do., \$2.75 to \$3.25; fresh milkers, good to best, \$3.50 to \$4.50; springers do., \$3.50 to \$4.20; cows and springers, common to good, \$2.80 to \$3.30. Calves, choice to extra, \$5.75 to \$6; good to choice, \$5.25 to \$5.75; common, \$3.50 to \$4.

The sheep and lamb trade was generally about 25 cents lower with a total of 35 loads on sale. The offerings in New York were liberal and that left buyers here short of orders. They were in comparatively large supply, moderate demand and lower. Spring lambs were lower. Handy lambs, choice to extra, were quotable at \$5.50 to \$5.65; good to choice, \$5.25 to \$5.50; culls, \$4.25 to \$4.75. Sheep, choice to extra, \$4.75 to \$5, good to



OEO. D. HARDER, Manufacturer, Cobleskill, N. Y. Horse Powers, Ensilage Cutters, Round Silos, &c.

choice, \$4.50 to \$4.75; culls, \$3.50 to \$4. Export sheep, \$4.65. Spring lambs, \$5.75 to \$6.25.

The hog trade was lower by 10 to 15c. and generally quite difficult for sellers. Yorkers sold at \$3.95 to \$4.05; mixed, \$4.10 to \$4.12½; medium, \$4.15 to \$4.17½; pigs, \$3.85 to \$3.90.

The offering of horses were 350 head of generally medium quality. The trade was only fair, and while there was no change in prices, the market was easier. Drivers, well bred and speedy, were quotable \$120 to \$165; good to choice, \$70 to \$145; draft horses, good to extra, \$120 to \$150; good to choice, \$70 to \$125; common to good drivers, \$50 to \$75; general-purpose horses, \$25 to \$65; exporters, \$95 to \$130. Cavalry, \$125 to \$130.

REPRESENTATIVE SALES

Cattle—5 stockers, 452 lbs., \$3.60; 10 springers, \$33 each; 2 cows and 2 calves, \$50 each; 6 cows and 6 calves, \$37 each; 20 steers, 1276 lbs., \$4.95; 12 stockers, 495 lbs., \$4.50; 3 stockers, 590 lbs., \$4.25; 6 steers 1138 lbs., \$4.75; a load of handy 1200-lb. steers sold as \$5.35; 84 calves, 155 lbs., \$5.90; 4 do., 162 lbs., \$5.75; 96 do., 159 lbs., \$5.90.

Sheep and lambs—56 handy lambs, 57 lbs., \$5.75; 133 sheep, 89 lbs., \$4.65; 59 lambs, 70 lbs., \$5.40; 98 sheep, 114 lbs., \$4.65; 186 sheep, 114 lbs., \$4.65; 91 lambs, 88 lbs., \$5.50.

Hogs—48 medium, 211 lbs., \$4.12½; 74 mixed, 192 lbs., \$4.12½; 97 do., 180 lbs., \$4.12½; 69 pigs, 117 lbs., \$3.90; 71 Yorkers, 168 lbs., \$4.07½; 119 do., 158 lbs., \$4; 180 pigs, 108 lbs., \$3.90.

OUR CHICAGO LETTER.

Chicago, June 13, 1898.

Cattle are being marketed with fair freedom, last week's receipts amounting to 45,121 head, against 42,670 the preceding week, and 51,030 the corresponding week last year. Taking the country as a whole there is apparently a big shortage in the cattle supply, and the influx of Canadian and Mexican cattle has by no means met the deficiency. The shortage is largely well-bred fat beefs, and so far enough common and medium grades of steers have been marketed to meet trade requirements, but there is a marked lack of cows, stockmen being disposed to keep their cows and heifers for breeding purposes. Never before were so many Western range cattle fed by stockmen, and but for these steers, the cattle supply would be extremely small. For a week past the general demand for cattle has at least equaled the supply, and to a large extent prices ruled 10 to 15c higher. Beef steers weighing 900 to 1,650 lbs. are now selling at \$4.10 to \$5.10 for common to choice, chiefly at \$4.50 to \$5, a few extra cattle selling at \$5.20. Exporters are very good buyers at \$4.65 to \$4.90, their selections covering cattle that weigh 1,270 to 1,480 lbs. To a large extent the heavy weights are bought to ship to Boston, where big cattle are still popular. Fed Western steers averaging 1,100 to 1,650 lbs. sell at \$4.40 to \$4.85, and prime fed Western heifers averaging 1,335 lbs. sell up to \$4.90. Native cows and heifers sell actively at \$2.60 to \$4.65, few selling under \$3.75. Bologna bulls are active at \$3 to \$3.75, and export bulls sell rapidly at \$3.80 to \$4.25. Calves have declined sharply, and demand for stock steer calves having abated, and sales now range at \$4 to \$6.00, the greater part going for \$5 to \$6.25. The stocker and feeder trade is less animated, with sales at \$3.85 to \$4.85, and a few little stock heifers at \$3.50. The call is chiefly for choice little steers. Milkers and springers are wanted at \$25 to \$45 per head, sales being largely at \$30 to \$40.

Hogs arrived last week to the number of 153,692, against 131,675 the preceding week, and 166,654 the corresponding week last year. The quality of the hogs shows improvement as the season advances and the average weight is steadily increasing. The present average is 233 lbs., the heaviest average since last January. A month ago the receipts averaged but 223 lbs., a year ago 238 lbs., and two years ago 215 lbs. Chicago packers and eastern shippers wanted the hogs, but they were bearish and prices suffered a big decline. Light-weight hogs continued to sell at a discount, and choice heavy and medium weights commanded a substantial premium. Numerous lots of little pigs sold badly, Oklahoma pigs from Texas and Arkansas selling very low, and a drove of 101 pigs that averaged 109 lbs. went for \$2.25. Leading commission firms at the stock yards advise shipping good, ripe, heavy hogs that are well finished on the theory that the future does not look bright enough to justify holding them. But everyone advises holding back the light hogs until they become at least reasonably heavy, as it is almost certain to prove a profitable policy. Stags have been selling at \$3.35 to \$3.80, and boars at \$1.75 to \$2.50. On Saturday there was a drop of 10 to 15c. in sympathy with a big fall in provisions that followed a reported outbreak of yellow fever down South. Hogs sold at \$3.70 to \$4 for light and \$3.80 to \$4.15 for heavy, the greater part of the hogs fetching \$3.90 to \$4.05. More hogs sold under than over \$4, and prices were fully 25c. lower than a week earlier. Packers have taken a bearish attitude, and they seem determined to force prices still lower.

Sheep and lamb receipts last week amounted to 72,247 head, against 68,173 the previous week, and 65,979 the same week last year. The demand has continued remarkably good, and there was a further advance of 50c. in prime light-weight clipped lambs and 37½c. in prime handy weight sheep. Clipped lambs sold at \$4 to \$4.50 for the commonest flocks up to \$6.10 for choice 79-lb. lambs, few selling below \$5. Heavy lambs were discriminated against, and sales were made of 92-lb. lambs at \$5.50, and 100 to 107-lb. lambs at \$5. Colorado woolled lambs sold from \$6 to \$6.10 early up to \$6.50 later. Nearly all of these lambs have been marketed and the season is practically ended. Spring lambs have continued active at \$6 to \$6.60 per 100 lbs. Sheep sold freely at \$3.25 to \$3.50 for common up to \$5.12½ for prime light-weights, with 130 to 135-lb. sheep at \$4.25 to \$4.75. Texans sold at \$3.50 to \$4.85,

and goats brought \$4.50 to \$5 per 100 lbs. Rams sold at \$3 to \$4. Both sheep and lambs sell at the highest prices paid in several months.

The horse receipts have reached liberal proportions, and are far ahead of a year ago. With such large offerings and only a normal demand from all sources, except for cavalry and artillery horses, prices rule very unevenly. Draft horses are rather slow at \$75 to \$160, and Boston and export chunks are in fair demand at \$65 to \$120. Farm chunks are selling at \$45 to \$65, and drivers bring \$65 to \$300. Southern chunks sell at \$25 to \$45, and general purpose horses at \$20 to \$65. Common and medium horses sell badly. F.

MARKETS BY TELEGRAPH.

NEW YORK, June 13.—Wheat, No. 2 red, \$1.00. Corn, No. 2, 36½c.—Oats, No. 2, 30c. Wool, domestic fleece, 15½c. Butter western creamery, 13½c. Cheese, new light skims, 5½c. Eggs western, 12c. Mess pork, 11.50@11.75.

CHICAGO, June 13.—Wheat, No. 2 red, 87½c. No. 2 corn, 32c. No. 2 oats, 25½c. No. 2 rye, 47c. No. 2 barley, f. o. b., 33½c. No. 1 flaxseed, \$1.16. Prime timothy seed, \$2.67½. Mess pork, \$9.55@9.60 per bbl. Lard, \$5.75@5.77 per cwt. Cheese, 7½c. Eggs, fresh, 9½c. Butter, creamery, 14½c.

VISIBLE SUPPLY OF GRAIN.

NEW YORK, June 13.—The statement of the visible supply of grain in store and afloat Saturday, June 13, as compiled by the New York Produce Exchange, is as follows: Wheat 19,681,000 bushels, decrease 2,906,000 bushels; corn 21,465,000 bushels, increase 306,000 bushels; oats 7,113,000 bushels, decrease 756,000 bushels; rye 1,781,000 bushels, decrease 104,000 bushels; barley 497,000 bushels, decrease 86,000 bushels.

WOOL MARKET.

The Boston Commercial Bulletin of June 10 says:

The market was more quiet this week than last. This is accounted for by the slackening up in the demand for wool to be used in government clothing. The demand from the regular sources has neither increased nor diminished. There have been sales of fine medium Territory on a basis of from 44c. to 45c. Offers for fine medium Territory at 40c. and fine combing at 62c. and 63c. have brought no sales. The sales of the week are 961,000 pounds domestic and 313,000 pounds foreign against 1,611,000 pounds domestic and 581,000 pounds foreign last week, and 1,651,400 pounds domestic and 7,133,000 pounds foreign for the same week last year. The sales to date show an increase of 39,998,000 pounds domestic and 69,014,100 pounds foreign from the sales to the same date in 1897. The receipts to date show an increase of 71,657 bales domestic and 310,456 bales foreign.

PORK PACKING AND PROVISIONS.

The Cincinnati Price Current reports 410,000 hogs handled by Western packers last week, against 415,000 the preceding week, and 430,000 the corresponding period last year. From March 1st, 5,565,000 against 4,915,000 a year ago—an increase of 650,000 for the season. Prices declined about 25c. for the week. Provisions are also declining. July pork closed in Chicago at \$10.25, against \$11.17 1-2 a week before, and \$7.67 1-2 a year ago. Total exports of pork and bacon for the week, 23,265,000 lbs., against 12,610,000 last year; lard, 17,335,000 lbs. against 10,313,000 last year, making the total exports nearly double what they were last year.

BUSINESS CONDITIONS.

Dun & Co.'s weekly review of trade says that a stronger business situation it would be difficult to describe. The certainty that the Spanish fleet is imprisoned and helpless, the progress made by our forces, the certainty of an early termination of the war, the enormous balance that must be paid to the United States on business transactions, are all big factors, and the growing anxiety to lend money on easy terms begins to accumulate a standing credit. The collapse of May speculation in wheat has only made it more evident that the outside world requires nearly all if not quite all the wheat this country can spare.

Last week Atlantic exports, flour included, were 4,206,293 bushels, against 1,634,602 bushels last year, and Pacific exports were 253,213 bushels against 125,213 bushels last year, and it is close to the end of the season. Over 210,000,000 bushels of wheat have already been exported, and almost 200,000,000 bushels of corn—1,134,800 bushels during the past week against 1,787,035 bushels last year, and the market is justified in feeling that those who have gone so far beyond all precedent in defying current reports are entitled to pay for it.

Several iron and steel concerns have closed for repairs, so that production shows a decline. The woolen manufacturers are buying no wool, and the sales at the three chief markets during the past week were only 2,549,900 pounds against 4,878,750 in 1892. But the demand for goods proves somewhat better in many directions than was expected and the government requirements have compelled some manufacturers to buy somewhat largely grades wool which they have not expected to require. The auction sale of carpets, resulting in prices said to average 50 percent below the list quotations, does not encourage buying, and in carpet wools the market is decidedly tame. Cotton goods show a stronger tone throughout.

Failures for the week have been 203 in the United States against 202 last year, and 17 in Canada against 30 last year.

WOOL.

Farmers having Fleece Wool or Sheepskins to sell can obtain highest market prices by addressing

CARL E. SCHMIDT,

54 Macomb St., DETROIT, MICH.

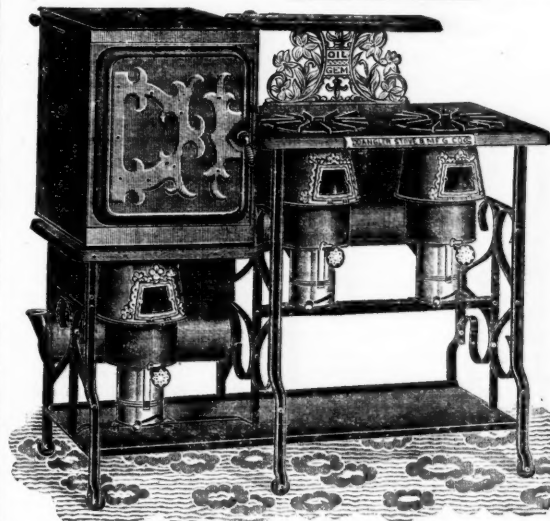
SUMMER FAVORITES!

The Gem Blue Flame Oil Cook Stoves.

NO HEAT! NO SMOKE! NO ODOR!

Perfect Combustion. Simple Construction. Not Liable to Get Out of Order. Elegant Design. Beautifully Finished. A Powerful Blue Flame. And Every Way as Safe as an Ordinary Lamp.

FOR THE BENEFIT OF OUR SUBSCRIBERS.



We have made arrangements with the manufacturers of the

Gem Oil Stoves

to sell them to our subscribers on the best terms ever made for blue-flamed stoves. They are just the thing for hot weather; started and ready for business with the touch of a match. When through cooking, washing or ironing, a turn of the fingers puts out the heat and they are nothing but cold iron.

High Gem Stove No. 352, represented by this cut, stands 27 inches high, has three burners (2 high, 1 low) and is on castors. List price with Steel Oven \$17.00. OUR PRICE (see below).

OFFERED AT WHOLESALE PRICES, FREIGHT PAID.

The Gem Cook Stoves are full nickel trimmed, polished brass fount and burners. Circular wicks, powerful burners, which give an intense hot blue flame. Will do all kinds of cooking and baking. The fount is provided with an automatic indicator, and is located at the back of the burners at sufficient distance to keep the oil perfectly cool. These stoves are capable of doing as much work as an ordinary range.

High Gem Stove No. 351, stands 27 inches high, has three burners, and is on castors. List price, \$12.50. OUR PRICE (see below).

Low Gem No. 349 is same stove exactly as 351 only lower and is without castors and back shelf. It stands 15 inches high. List price, \$10.00. OUR PRICE (see below).

OUR CHOICE.

In our opinion, until the wickless stoves have been longer in use, the wick stoves will give better satisfaction. At least our experience justifies this opinion. We sold last season hundreds of the oil stoves; we cannot recall a single complaint. We believe the stove we are offering our readers to be the very best on the market. They are so constructed as to be absolutely smokeless and odorless, and are fully guaranteed to give satisfaction.



HIGH GEM No. 350,

as represented by this cut, is 27 inches in height, has two burners, and is on castors. List price, \$10.00. OUR PRICE (see below).

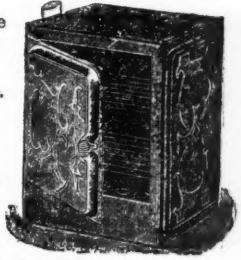
LOW GEM No. 348.

This stove is the same exactly as No. 350, only 12 inches lower, without castors or shelf back. List price, \$7.50. OUR PRICE (see below).

Large Steel Oven,

made of the best material. Best work. Best oven.

List price, \$4.00. OUR PRICE, \$2.00, freight paid.



POINTS OF MERIT OF THE GEM STOVE.

It is the simplest blue flame burner and the most powerful. The GEM is the only stove which has drawn seamless tubing, thus avoiding the possibility of oil accumulating on tube and odor coming therefrom. Castors on all high Gems. Removable grates and tanks. No complications. Large top surface. Economical in oil. All work strongly made. Perfect working. Easy to clean. Easy to operate. Easy to move. Handsome. Best material used. Made especially for us by THE DANGLE OIL STOVE MFG. CO., one of the largest manufacturers of oil stoves in the world.

OUR GUARANTEE.—As usual, we guarantee these stoves to be in every way as represented and to give entire satisfaction, or we will refund the money and pay all charges, so no one takes any chances. By contracting for a large number direct with manufacturers and paying spot cash, we are enabled to offer ACTUAL BARGAINS to our subscribers. THE MOST ECONOMICAL, BEST AND CHEAPEST.

PRICES TO OHIO FARMER SUBSCRIBERS—FREIGHT PAID.

No. 352—List price \$17.00; to subscribers 25 percent off, or.....\$12.75
Nos. 349 and 350—List price \$10.00; to subscribers 25 percent off, or..... 7.50
No. 351—List price \$12.50; to subscribers 25 percent off, or..... 9.38
No. 348—List price \$7.50; to subscribers 25 percent off, or..... 5.63
Large Steel Oven—To subscribers..... 2.00

We can also furnish the NEW WICKLESS GEMS at same price.

TERMS.—Cash must accompany order. Freight paid only to the Mississippi river. Remit by registered letter, postoffice order or express.

GASOLINE STOVES can be furnished if desired.

Address all orders to THE MICHIGAN FARMER, Detroit, Mich.

Grange Department.

Our Motto:—"The farmer is of more consequence than the farm, and should be first improved."

Address all correspondence for this department to

KENYON L. BUTTERFIELD,
AGRICULTURAL COLLEGE, - - - MICH.

News from Michigan Granges is especially solicited.

SOME RECENT ACHIEVEMENTS OF THE GRANGE IN MICHIGAN.

III.—BEATING THE TOWNSHIP UNIT SCHOOL SYSTEM.

There is a firmly rooted feeling on the part of the majority of our farmers against the proposition to change the school unit from the district to the township. School men, almost to a man, advocate this change. We believe they do it unselfishly and for the good of the schools. We also know that the farmers are equally interested in the improvement of the schools with the school men, and that their opposition to this plan is based on the belief that harm rather than good will come. We are frank to say that we do not believe many of the fears of the farmers would be realized; nor do we think that all of the splendid results predicted by the school men would come to pass. However, the issue has been very clearly made, and it is very evident that the farmers have not wanted the unit school system.

From time to time attempts have been made by the school men to crowd this measure through, and in the legislature of 1895 a very ardent attempt was made to pass an optional township unit law.

The bill was a senate bill. As soon as discovered, petitions began to pour in opposing the passage of this bill. The Grange took the initiative and made its position very clear. When the bill came up for action, although advocated earnestly by one or two senators it was badly beaten. It was admitted by several senators that if their own views were consulted they would vote for the bill as then drawn up, but that they had learned the feeling of their Grange constituents, and would not vote for the bill.

Whatever one may think about the merits of the measure, the action of the Grange was a splendid demonstration of the power of the Grange with the legislature. So effective were the results that nothing was done in the last legislature that seriously contemplated a revival of the plan, and, in fact, two years ago one of the leading candidates for the office of superintendent of public instruction pledged himself, if nominated and elected, not to push the township unit plan.

IV.—THE MORTGAGE TAX LAW.

This question has two sides to it. The law is not wholly satisfactory, and yet the farmers feel that until something better is offered it should stand on the statute books. Every legislature recently has attempted to repeal the law.

Except for the promptness and the thoroughness of the Grange opposition, under the direction of Worthy Master Horton, the law would have been repealed by the last legislature. If the opponents of the law desire to get it repealed, they must be able to show that the kind of property reached by the present law can be more fully reached, for purposes of taxation, under some new rule. Until then the Grange will strenuously oppose the appeal of the present law. Legislators and would-be legislators will find it to their political health to take note of the position of the Grange on this subject.

This is another mooted question. No one claims that the present system of farm statistics is perfect, many think there are changes that might be advantageous. It is a nuisance to some of the supervisors, many of whom oppose it seriously. But after all, when the matter has come up before the State Grange in recent years, the intelligent farmers have stated that while they do not approve of the plan of collecting farm statistics, in every particular, they believe fully in the principle, and are not willing to give up the present law entirely.

This was the position of the Grange in the last legislature. So overwhelming was the pressure for the repeal of the law that there was apparently no question about its repeal, but when the Grange "got in its work" the aspect of things changed. The result of the struggle was a modification of the law which, it is stated by experts, will be helpful rather than otherwise. The principle was maintained, and the results were attributed entirely to the position of the Grange.

In discussing all of the above questions, which are, as we have stated, debatable questions, we wish to emphasize not so much the mind of the Grange on the subject, as the following fact: The Grange, representing the great body of intelligent farmers, has taken a certain position on these questions. Efforts were made in the legislature antagonizing this position. The Grange, through letters and petitions, made its wishes perfectly clear to the legislature. The legislature listened, and in every case the Grange idea was maintained. This is the important thing to remember and the significant thing. It shows the power of organization, the power of the Grange. It proves the fact that if farmers will but co-operate they may make themselves heard in legislative halls.

DAIRY INSPECTION.

Recently the Dairy and Food Commission has been making an inspection "with a view of learning the true conditions surrounding the production and sale of milk in the various cities and villages of the state." During May the principal work was done in the vicinity of Lansing. Doubtless the work performed has been of value. In many dairies conditions were found undesirable, and, strange to say, many of the dairymen, undoubtedly honest, really did not know what are proper conditions for perfect milk production. Those living in the vicinity of Lansing held a meeting and were addressed by Prof. Smith and Mr. Marshall, of the Agricultural College. They are much interested and are very glad indeed to study the subject and to put themselves in line with up-to-date dairying.

We would suggest, however, to the Commission, that in the future a somewhat more scientific system of inspection and report be inaugurated. Here is an average report of an average dairy near Lansing: "Cows generally clean, stables unclean, ceilings dusty, drainage imperfect, ventilation good, sanitary conditions poor. Uses well water. Yards fairly clean."

Now, it is not possible to tell from this report what the situation really is in that dairy. For in tance, what do sanitary conditions mean, and when are they poor and when good? Does it mean that there are conditions that are likely, ultimately, to produce disease among the animals, or such as will more immediately affect the quality and healthfulness of the milk? Also in regard to the well water. It makes a vital difference what sort of well is used. If it is a surface well, so located that it receives more or less drainage from the surrounding surface, it indeed needs looking after. If it is a fine drive well, it is possible that the water may be just as good as, or better than, running water.

We simply speak of these things to emphasize the necessity of rather more careful work. Doubtless this will come in time.

As to the general effect of such inspection, we are, however, in full sympathy, and the stirring up will do a great deal of good.

GRANGE NEWS.

Alumina Grange, No. 585.—Through its purchasing agent, has sent a large order for Paris green. Initiated four.

Felts Grange, No. 347.—Our agent has secured the building of a Lamb wire fence around our local cemetery. Pomona Grange met with us June 2.

Verona Mills Grange, No. 667.—Entertained Pomona Grange June 2. Decided in favor of having a summer farmers' institute discussion on many topics. The majority were in favor of free text books.

Clayton Grange, No. 694.—Ordered 2,250 pounds of binder twine.

Glass Creek Grange, No. 425.—Had a little drill in parliamentary law June 4.

Allendale Grange, No. 421.—Will entertain Western Pomona at a basket picnic at our hall June 30.

Home Grange, No. 129.—Have sent for a large order of binding twine. Observe children's day June 18; ice cream will be furnished free to the children.

Silver Lake Grange, No. 723.—Entertained county Grange June 1 and 2.

Cannon Grange, No. 39.—Will discuss the curl leaf of the peach tree at the next meeting.

Ashland Grange, No. 545.—Entertained Ashland and Casnovia Teachers' and Patrons' Association June 3 and 4.

Macon Grange, No. 167.—Has lost, by death, two charter members, Richard Clarkson and Asel Russell. Degree work has taken most of our time lately; programs crowded out. I do not think degree work should crowd out programs. Would like to hear from other Patrons on the subject. The "M. F." should be in the home of every member of the Grange.

Hillsdale Co. Grange met with Lick-

ley's Corner's Grange June 2. The forenoon was taken up with business. A bountiful dinner was served at the home of Brother and Sister Drake. After dinner the welcome was given by Bro. Ward, response by Worthy Master. Talk by Andrew Edwards on the "Sheep industry" followed by N. I. Moore. It was thought that sheep raising was one of the most profitable industries of the farm. Select reading by Sister Phillips on the "Government of children," also a talk about "Free text books." We believe that a majority of the people are in favor of a uniform system of text book to be published by the state, and to be furnished to the schools at cost.

Sister Bowditch gave a good talk on "Home decoration." She thought that one of the most essential things was that of harmonizing in shades and colors in the rooms of our homes. This was followed by a recitation by Miss Huff which was well received. E. Z. Nicols had a paper on "The future of agriculture," and Sister Hunker on "How can we improve our social relations," which brought out some good thoughts. Our Granges are looking forward to our "Tri-State assembly" to be held on the 17th of August at Baw Beese lake.

N. I. MOORE, Cor.

A WORD OF HOPE.

Dear Grangers: To those whose hearts keep time with the patriotic inspiration of the present hour, there is an unspeakable gratification and enjoyment. We have always been proud of our birthright as Americans and of our loyalty to the highest and best interests of humanity. But never in the history of the human race has there been so generous and unselfish response to the cry of suffering, helpless ones, as by America at the present hour. No impulse or uprising has ever been so spontaneous or so universal. To one who remembers the discordant element that composed this country in times gone by, and not very long gone by either, the homogeneity of American people is as marvelous and gratifying as it is rare. Chastened and purified by the civil war, yet sectional and prejudiced each against the other, we evidently could not so soon change and become one in thought and impulse and desire except by present conditions.

True, "War's not all a blessing," for there must be suffering and sorrow at the front and at home. Yet there were never so many manly men, and womanly women as at the present hour in America.

This I say for the patient toilers who see so little change amid hard labor and homely surroundings. Memory and hope, and a consciousness of labor well done must be our solace. Fraternally,
Mossback. JOHN W. MORLEY.

SUMMER WORK IN THE GRANGE.

In Allegan Grange we try to have as much variety in the literary work as possible. We hold two meetings each month, one for business, and one for social and literary work. Our literary meetings are public and are well attended. We hold some grand meetings at the homes of members.

Thus we interest those outside the gates and increase our membership. Over one hundred new members have joined the several Granges in this county since January 1st, 1898. Ganges Grange leads in new membership. Our county Grange is strong and active; a class of ten received the fifth degree at our last Pomona.

Brother and Sister Patrons, do not neglect your Grange during the busy season. Hold regular meetings. Summer vacations are hard to overcome.

Allegan.

L. C. ROOT.



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MAKING THE FARM HOME ATTRACTIVE.

About this time of the year the farmer has fairly begun the summer's work and a little forethought and work will do much towards making the home attractive. Perhaps a little more attention to this would have some effect in keeping the boys on the farm, and to some extent stop the mad rush to the cities.

The cultivation of flowers has much to do with the appearance of the home, but as the mother and daughters generally look after these we will leave them in their hands and notice a few things that come under the care of the men.

Wherever the box martin is found we think they will repay all the work it takes to give them a home for the summer. A box that will accommodate them is easily made and put up and the martins will pay for it many times with their merry prattle. They are also useful to drive the hawks and crows away, thus furnishing protection for the fowls. The worst enemy of the martins is the English sparrow, but by giving the martins a little aid when they first come, we have always succeeded in giving them a home.

Small fruit should have a place on every farm. A small piece of land planted to small fruit and given proper attention will prove to be a profitable investment. A small outlay of cash will secure enough plants for a start and most of them are easily propagated. A great many farmers seem to think that they have no time for these, but there is nothing perhaps that will pay any better. Their cultivation is not difficult. All crops require certain conditions to make them grow and so it is with small fruit. By following the instructions given in the catalog of a good nurseryman, one should have a reasonable degree of success.

The appetite demands a change and variety of food, and how appetizing is a dish of ripe strawberries with sugar and cream, strawberry shortcake, or the first well cooked, well sweetened gooseberry pie. But to say nothing about the attractive or appetizing qualities of small fruits, they are healthful, and when the doctor sees a good supply of these he gives a sigh and goes riding swiftly by. And then perhaps some member of the family has a taste for their cultivation and if given a little encouragement would adopt it as a business and make a success of it.

A good patch of watermelons will furnish much pleasure. How nice to have a good watermelon when a friend drops in, and if you have the melon he is pretty sure to drop in. Sociability and melons go hand in hand.

But our success with melons has been limited so we will desist by saying that we intend to keep trying.

A few stands of bees will generally pay for themselves. Honey is something that nearly every one likes and it is always ready when the housewife wants to get a meal on short notice. It is healthful and handy is to carry to a sick friend or neighbor.

Our experience with bees has not been a great success from a financial standpoint, but they have furnished honey enough to pay their way, and as long as they do this we will give them a chance to do better.

The above are a few of the things that will help to make the home attractive, will add value to the farm and exert an influence for good.—Wallace Jamison, Jefferson Co., Ind.

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Horticultural.

THE GARDEN.

One of the hobbies with writers upon garden culture is the use of the horse. This is well enough in its own way. The horse has his place, but there are many gardens in which he is not wanted after the plowing is done. If the garden is large the horse is almost a necessity, but if the space is limited it is different. The rows may be made far apart, and if there is any space at the end there will be loss from tramping. The capacity of the garden is seriously limited. Yet we would rather use a horse than depend upon the hoe, as was formerly done. The hoe belongs to a bygone age of the time of the scythe and cradle, though there are many gardens in which it is the only implement for weeding. One of the wheel cultivators that are run by hand are worth more than four hoes for killing weeds, and the wonder is that they are not in more common use. By going over the ground frequently with one of these cultivators the ground is not only left free from weeds, but is kept mellow as could hardly be done with a hoe, which is very important in a dry season. Some of these implements have two wheels, so they can be run astride a row, making a machine as near perfection as we can reasonably hope for at present. Of course weeding and thinning the row has to be done by hand. Here is an iron reality which no machine has yet been able to soften. No one who has tried one of these cultivators is willing to go back to the old method again.

A writer in The Farmer of May 21 believes that tomato rot is caused by dry weather and is not a disease. This explanation is certainly much simpler than the one accepted by scientists. We have noticed that the rot has been very destructive during some unusually dry seasons. The worst time we ever had was a year when the plants were caught by a spring frost immediately after being set, and then had to endure a severe drouth during the summer. The result was that the plants were weakened and rendered susceptible to disease, which may account for the ravages of the rot. As Bordeaux mixture has been found to check somewhat the disease it is good reason for laying the blame to some fungous growth.

F. D. W.

PEACH CURL AND PLUM POCKETS.

Prof. J. C. Arthur, botanist at the Purdue University Experiment Station, has issued a bulletin on these diseases, in which he says:

"All over the State of Indiana, the peach trees are this season quite generally injured by abnormal development of the leaves. They become thickened, much puffed and blistered, and with a whitish bloom on the surface of the affected portions. These distorted leaves will finally drop off, and often the fruit, on account of the weakened condition of the tree, drops also. Healthy leaves after a time replace the diseased ones, and in the latter part of the season the trees regain a normal appearance.

"This disease is known as 'leaf curl,' and is caused by a fungus that penetrates the tissues, and on the surface forms spores so abundantly as to make the leaf look pale. Most of the injury during any season, however, does not come from the spread of the spores, but from the part of the fungus that lives over the summer and winter in the ends of the twigs and buds. Although the trees appear to quickly recover from an attack of 'curl,' yet they really carry the disease in their tissues until next year, when it breaks out again in the young leaves. Some seasons are more favorable to its development than others, but a tree which once shows the disease is likely to have more or less 'curl' every year.

"No effective remedy is known. Spraying with Bordeaux mixture as soon as the disease shows, checks the distribution by spores somewhat, and cutting off the twigs and limbs bearing the curled leaves gets rid of some of the perennial part of the fungus; but the most thorough attention only partially checks the disease and it is doubtful if the results pay for the effort.

"Plum trees are affected with diseases produced by very similar fungi. The spring growth, sometimes the leaves, but more usually the shoots, are puffed and whitened, and greatly distorted, the young stems occasionally

becoming a half inch to an inch thick, soft and hollow. In other cases the fruit is similarly affected. The plums are paler, more elongated, soft and hollow, without a trace of a pit. These are often called 'plum pockets,' and sometimes 'bladder plums.'

"Like the peach curl, this disease winters over in the ends of the twigs, and a tree once attacked will be likely to show the disease from year to year. But as a rule only a few branches of a plum tree are attacked, and cutting away these branches may rid the tree of the disease. No other remedies are known."

WHAT IS THE MATTER WITH THE CUCUMBERS?

Many residents of the town and city are interested in cucumbers or in cucumber pickles, and naturally make the above inquiry when supplies are short and prices are relatively high. The grower of cucumbers has it in his purpose to produce large crops, be they pickles or market cucumbers, but when the vines become yellow, the crop scant and the few discovered are "nubby" or entirely unfit for use, he asks in despair the same difficult question. The inquiries are well founded; there has been a marked decline in returns from cucumber planting during the past two years and this was especially marked in 1897.

serious losses from this disease the present season.

HOW MAY MILDEW BE PREVENTED?

Experiments made in New York, New Jersey and Ohio show that mildew is prevented by thorough and timely treatment with fungicides, especially Bordeaux mixture of standard strength (4 pounds copper sulphate or blue vitriol and 4 pounds of quicklime to 50 gallons of water).

It appears that seven or eight sprayings will probably be required, beginning when the plants are forming vines, for late cucumbers, for all by July 1, and repeated at intervals of ten to fourteen days. The mildew spores are produced upon the under surface of diseased leaves and scattered by winds, etc. Spraying, to be effective, contemplates keeping the vines so covered that spores will be destroyed whenever they may alight upon the foliage. Thorough covering of the upper surfaces of the leaves will accordingly be sufficient; this will destroy the spores since these cannot easily alight upon the under surfaces. Heavy showers may bring about this result, however, when spores are abundant on the surface of the ground, as in badly diseased fields. Spraying of cucumbers is recommended to keep the plants from becoming diseased, and from the nature of the trouble can scarcely cure those once affected. Unless something unusual prevents it, the mildew promises to be more prevalent in 1898 than ever

trolled in a measure by the same treatment as recommended for the mildew. A. D. SELBY.

THE CHOICE AND CARE OF CULTIVATED FLOWERS.

(Paper read by Mrs. Starr, at the June meeting of the Troy Farmers' Club.)

As the subject for to-day's discussion is "Flowers," I have chosen the title to my paper in keeping with the topic.

"To him who in the love of Nature holds Communion with her visible forms she speaks

A various language; for his gayer hours, She has a voice of gladness, and a smile, And eloquence of beauty; and she glides into his darker musings, with a mild And healing sympathy, that steals away Their sharpness, ere he is aware."

In all her aspects, nature is either grand or beautiful, and if our minds are in tune with the harmony around us she never fails to impress us in some manner. For instance, a landscape of mountains or trees inspire lofty and ambitious thoughts; a view of the sea sends our mind travelling as wide an expanse as the waters before us cover, as we fancy the appearance of the distant shores. And so, when we turn to the bright messengers around us—flowers—we reflect some of their brightness, and if we yield to their influence, we are soon "at peace with the world," because we see the happiest side of life and nature.

Nature cultivates her flowers, without our assistance, so that we can find already blossoming for us the choicest plants—if we travel far enough. But we are limited to one very small portion of this great, beautiful earth, hence must assist nature with our hands in transplanting and caring for her plants, if we would bring the wealth of a world to our feet.

It is gratifying to know that it is within the power of nearly every one to successfully raise flowers, requiring the outlay of a little time and strength. I am not sure, either, about the latter, for it seems that health and strength are gained, rather than lost, in outdoor work in our gardens. And as for time, there are many less important things upon which we waste time and energy, than the beautifying of our homes in this manner.

The first thing to consider is the choice of the flowering plants that will be the most satisfactory in these points: Hardiness, wealth of bloom, duration of blossoming, and comparative beauty.

In our somewhat rigorous northern climate, the seasons are short, and as we cannot have blossoms in our gardens all the year, as do our more fortunate friends in California and the South, it is wise to have a succession of plants from those that blossom the earliest, through the summer flowers, to the latest lingerers in autumn.

Following this plan, our bulbs will be planted in the fall—Hyacinths, tulips, jonquills, and daffodils, and we will early in April be rewarded by their delicate blossoms. Of course, these bulbs are rather expensive, but they last, and increase, from year to year, and every year a few may be added, at slight cost, to the collection. These early flowers will have faded and the plants died down before it is time to plant the summer flowers; hence, the same beds may be filled with geraniums, verbenas, ageratum, heliotrope, and others of that class of "stand-bys." Certainly the sweet pea, pansy, nasturtium and petunia, will not be forgotten. They do not follow our succession of flowers, as they blossom from early until late, and are

(Continued on page

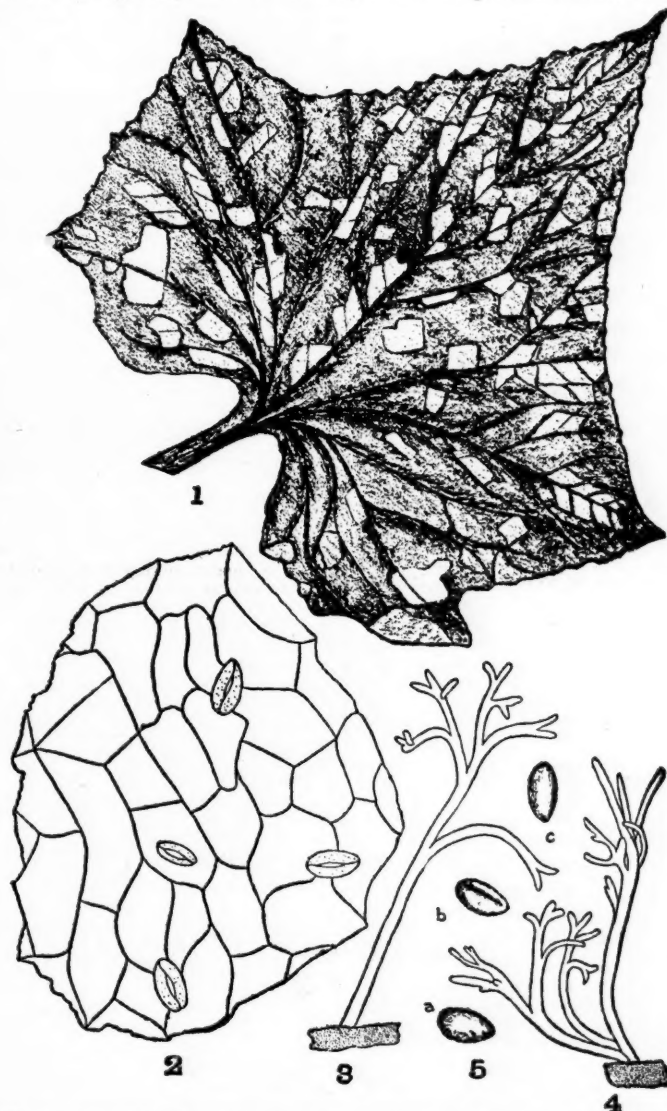


Fig. 1, shows the diseased cucumber leaf, natural size. The light areas representing the yellow spotting. Fig. 2, epidermis from upper leaf surface of cucumber, showing stomates. Figs. 3 and 4, spore bearing

branches of the fungus. *Plasmopora Cubensis*, from dried specimen. Fig. 5, a, b, c, spores (conidia) of the fungus; b shows grooved or collapsed condition. Figs. 2, 3, 4 and 5, magnified about 500 diameters.

The effect was very striking in the pickle fields of Wayne county, wherein the yield dropped from about 200 bushels of pickles per acre (average) to only 70 bushels per acre in 1897. Market gardeners report a like shrinkage of yield. Investigation has shown that the diminished yields, yellowing and death of the cucumber vines have been very largely due to the mildew, *Plasmopora Cubensis*. This fungus attacks the leaves, producing yellowing in angular spots as shown in the cut; finally the leaves die as from frost. The plant cannot flourish without vigorous leaves. Commonly the disease will begin to appear about the first week in August (it was later in 1897) and scarcely more than two weeks elapsed before bearing is at an end. The mildew, native in Cuba (?) first appeared in New Jersey in 1889 and it has since apparently spread over pickle fields as far west as Illinois. It has been serious in New York for at least two years and destructive in Ohio last season. Since the mildew reappears where once found, indications point to

before in Ohio. Growers will doubtless be well paid for efforts to prevent the disease.

In addition to mildew, there is an anthracnose of cucumbers which attacks the leaves, stem and fruit. The anthracnose is less prevalent than mildew and less easily prevented, though con-

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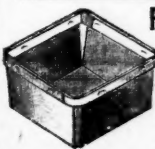
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In many respects the most satisfactory for farm homes. Still, they require some little care. The blossoms of the sweet pea and pansy must be picked every day, else they will cease to blossom. If the sweet pea vines are not watered during the hot months of July and August, they will turn yellow, and will not revive, until too late for blossoming.

Those interested in flower culture will not omit a bed of old-fashioned beauties. Annual phlox, varieties of pinks, bachelors' buttons, sweet alyssum, mignonette, will grow in riotous and beautiful profusion, with simply planting in the right soil. It is unnecessary to add that good taste will keep these by themselves, away from the more delicate and dainty blossoms.

To continue our "round of pleasure." The summer bulbs are next considered, of which the gladioli take the lead, and are being more appreciated every year. They are cheap, easily grown, and a succession of bloom by continuous planting can be secured. The varieties are numerous. Planted the first of May, they flaunt their gorgeous colors like a flaming pageant, along the path of departing summer.

For fall flowers, zinnias and asters are always favorites, and in the perennials, cannas and hollyhocks will keep the garden in a blaze of glory.

The climbers have not been mentioned. Those that last but one year are the morning-glory, cypress vine, flowering cucumber, and scarlet runner, all easy to grow, while the most satisfactory lasting vines are the honeysuckles, clematis, and—if you can make them grow—climbing roses.

No garden is complete without many varieties of the "Queen of Flowers." A little study and care will insure success in the cultivation of the monthly roses, the hardy perennial plants, and old-fashioned bush roses.

Of the flowering shrubs, we have our several favorites—those that blossom early and others late. In choosing these, is it not wise to take those whose graceful foliage is an ornament to the lawn after the brief flowering season is over? If this plan were strictly adhered to, I fear our lilacs would disappear, and their places be taken by spirea, wigelias, and tree roses. Our shrubs should be arranged so that at least one would blossom every month until fall.

There is not time to mention the various lilies, so essential in every garden, from the showy tiger lily, to the dainty lily of the valley, but they all have their place.

It is strange that many people whose taste is exquisite in matters of house-furnishings, and dress, do not exercise their taste in the arrangement of their gardens. Colors are mixed in confusion; plants of heavy foliage placed with those that have finely-plumaged leaves; roses among sunflowers; hollyhocks holding sway in the most conspicuous position, when their real place is around the kitchen door; poppies and sweet peas, peony and lily of the valley, holding close communion—all this is neither art nor nature.

We must not forget a woody corner in some shady spot, where ferns with their dainty greenness, Solomon's seal, and Jacob's ladder, for climber, alternate with erythronium, hepaticas, wood violets, and ground nut. If the soil for this is taken from the woods and made rich, these wood favorites will flourish all summer.

But where is the place to cease enumerating? Of course, flowers require a certain amount of care and attention. Eternal vigilance is the price one must pay if one would be successful with flowers. July and August are months that test one's enthusiasm to the utmost. One doesn't feel much like "bothering around" with a hose or a watering pot on a hot July evening. But a little sacrifice in this matter brings ample rewards.

With our blossoms, we are rich in the best of earth. No house decorations are ever so beautiful as these natural ones. Then, flowers give us an opportunity of being lavish in our gifts to our dearest friends.

"Gorgeous flowerets in the sunlight shining—

Blossoms flaunting in the eye of day, Tremulous leaves with soft and silver linings,

Buds that open only to decay. Everywhere about us they are growing, Some like stars, to tell us Spring is born,

Others, their blue eyes with tears o'er-flowing,

Stand like Ruth amid the golden corn. And with childlike, credulous affection,

We behold their tender buds expand, Emblems of our own great resurrection, Emblems of that bright and better land."

AGENTS—Either sex; why slave and toil for others, have your own business and make all the profits; our plan will interest you. WHEATON & CO., New Bedford, Mass.

For The Michigan Farmer.

THE CODLING MOTH.

In the last half dozen years the codling moth appears to be more of a pest in the West and Southwest than in the North or East. At first sight one might attribute this to more energetic spraying methods pursued by farmers in the older orchard sections of the country, but this is not entirely borne out by facts. In Nebraska, Kansas and Missouri, three broods of the codling moth are frequently hatched out in one season, while two broods in one season are somewhat unusual in New England and the Middle States. The reason for this greater activity in certain regions is difficult to explain.

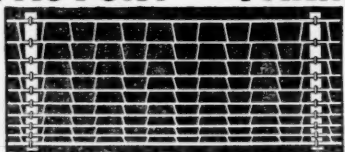
The destructiveness of the codling moth is great in many regions, but its power for injury is more limited than that of the apple curculio, because the latter cannot be reached and killed very easily with Paris green, while the former can. Spraying when conducted properly will keep down the codling moth. This pest was one of the first that farmers sprayed to destroy in this country, and the fact that it is in full force in our apple orchards today shows that spraying does not exterminate, but merely keeps down the numbers of a pest. The insect is really kept within narrow bounds, and its field for destruction is limited by the amount of energy one puts into the work of spraying. In the West and Southwest the apple curculio is more to be dreaded than the codling moth, and in the East the railroad worm is by far the more troublesome of the two.

The main question is to spray in time, and to repeat the process sufficiently often to keep the insects from getting a foothold on the trees. The first spraying with Paris green must be about one week after the apple blossoms fall, and before the little calyx cups of the fruit have had a chance to close up for good. The second spraying should be applied about the first of June. The difference in seasons makes the time for the second spraying a little elastic. If one can watch for the eggs, and apply the mixture when they first appear on the leaves, the best results will be obtained. The kerosene emulsion is better for this second spraying than Paris green, but some prefer the latter combined with the Bordeaux mixture.

In the latter part of June the larvae of the insects will begin to leave the apple, and paper bands placed around the tree will catch them. They can then be gathered and destroyed in numbers. If orchards are treated in this way for a few successive seasons, the codling moth will soon disappear, unless a neighboring neglected orchard keeps up a never-failing supply of recruits. This is one of the most disagreeable features of fighting any enemy in the orchard. So long as no law makes a neighbor keep his orchard free from pests, one must keep up the fight persistently, and do double work. It will probably be necessary then to spray the orchard again, and to keep a strict lookout for signs of the pests.

New York. PROF. JAMES S. DOTY.

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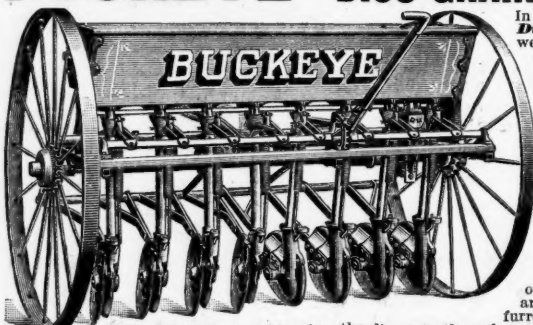
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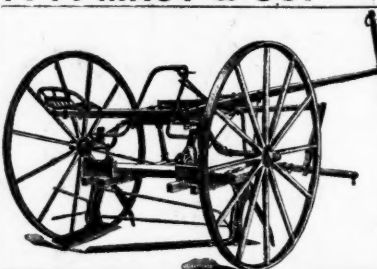
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